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F. Wingham 1013

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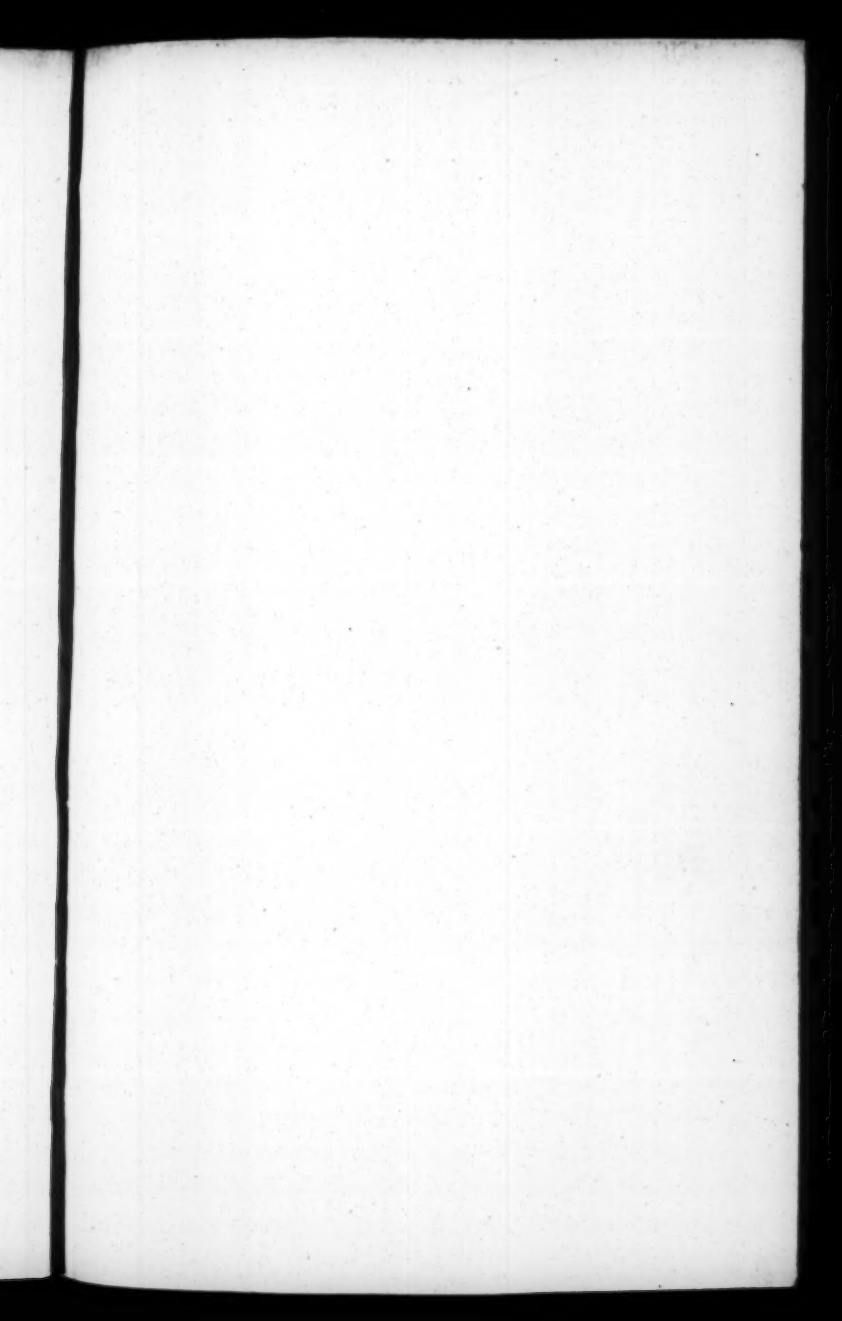
A POCKET BOOKE
Containing severall Choice
Collections
in

Arithmetick. Navigation.
Geometry. Dialling.
Astronomy. Surveying.
Geography. Measuring.
Gageing.



By JOHN SELLER
Hydrographer to the KING
1689.

1606/890.



3736 ¹⁵³
F. P. Wingham 1013

24

A POCKET BOOKE
Containing seuerall Choice
Collections
in

Arithmetick. Navigation.
Geometry. Dialling.
Astronomy. Surveying.
Geography. Measuring.
Gageing.



By JOHN SELLER
Hydrographer to the KING
1680.



February XXVIII dayes

Week dayes	Dom Letter	Remarkable dayes	Suns place	Suns rising	Suns setting	Ferreine Account	
1	D	Purif. Mary	D. M	H. M	H. M	11	G
2	E		23. 15	07. 19	04. 41	12	A
3	F		24. 16	07. 17	04. 43	13	B
4	G		25. 17	07. 15	04. 45	14	C
5	A		26. 18	07. 13	04. 47	15	D
6	B		27. 18	07. 11	04. 49	16	E
7	C		28. 18	07. 9	04. 51	17	F
8	D		29. 19	07. 7	04. 53	18	G
9	E		30. 19	07. 5	04. 55	19	A
10	F	Term ends	1 19	07. 3	04. 57	20	B
11	G		2 20	07. 1	04. 59	21	C
12	A		3 20	06. 59	05. 1	22	D
13	B		4 20	06. 57	05. 3	23	E
14	C		5 21	06. 54	05. 6	24	F
15	D		6 21	06. 52	05. 8	25	G
16	E		7 21	06. 50	05. 10	26	A
17	F		8 21	06. 48	05. 12	27	B
18	G		9 21	06. 40	05. 14	28	C
19	A	Valentine	10 22	06. 44	05. 16	29	D
20	B		11 22	06. 42	05. 18	30	E
21	C		12 22	06. 40	05. 20	01	F
22	D		13 22	06. 38	05. 22	02	G
23	E		14 22	06. 36	05. 24	03	A
24	F		15 22	06. 34	05. 26	04	B
25	G		16 22	06. 32	05. 28	05	C
26	A		17 21	06. 30	05. 30	06	D
27	B		18 21	06. 28	05. 32	07	E
28	C	Augustine	19 21	06. 27	05. 33	08	F
			20 21	06. 24	05. 30	09	G

Obferue that when it is Leap (which is every 4th) year
Then February hath 29 dayes. And St Mathias day
Falls to be upon the 25 day

March XXXI dayes

Week dayes	Dom. Letter	Remarkable dayes	Suns place	Suns rising	Suns setting	Evening Account
1	D	David Chad	T M	H M	II M	
2	E		21 . 21	06 . 20	05 . 40	11
3	F		22 . 20	06 . 18	05 . 42	12
4	G		23 . 20	06 . 10	05 . 44	13
5	A		24 . 19	06 . 14	05 . 46	14
6	B		25 . 19	06 . 12	05 . 49	15
7	C		26 . 18	06 . 08	05 . 51	16
8	D		27 . 18	06 . 06	05 . 54	17
9	E		28 . 18	06 . 04	05 . 56	18
10	F		29 . 17	06 . 02	05 . 58	19
11	G		V . 16	06 . 00	06 . 00	20
12	A		1 . 16	05 . 58	06 . 02	21
13	B		2 . 15	05 . 50	06 . 04	22
14	C		3 . 14	05 . 54	06 . 06	23
15	D		4 . 14	05 . 52	06 . 08	24
16	E		5 . 15	05 . 50	06 . 10	25
17	F		6 . 12	05 . 48	06 . 12	26
18	G		7 . 11	05 . 40	06 . 14	27
19	A		8 . 10	05 . 44	06 . 10	28
20	B		9 . 09	05 . 42	06 . 18	29
21	C	Paulinus	10 . 08	05 . 40	06 . 20	30
22	D		11 . 07	05 . 38	06 . 22	31
23	E		12 . 06	05 . 30	06 . 24	Apr
24	F		13 . 05	05 . 54	06 . 26	2
25	G		14 . 04	05 . 52	06 . 28	3
26	A		15 . 05	05 . 50	06 . 30	4
27	B		16 . 02	05 . 28	06 . 32	5
28	C		17 . 01	05 . 26	06 . 34	6
29	D		18 . 00	05 . 24	06 . 36	7
30	E		18 . 08	05 . 22	06 . 38	8
31	F	Annum Mary	19 . 07	05 . 20	06 . 40	9
	E		20 . 05	05 . 18	06 . 42	10

April XXX days

Week days	Dom Letter	Remarkable dayes	Suns place	Suns rising	Suns setting	Forwards Account
			D M H M H M			
1	G		21 54 05 16 06 44	11	C	
2	A		22 53 05 17 06 46	12	D	
3	B		23 51 05 12 06 48	13	E	
4	C		24 50 05 10 06 50	14	F	
5	D		25 48 05 8 06 52	15	G	
6	E		26 47 05 6 06 54	16	A	
7	F		27 45 05 5 06 55	17	B	
8	G		28 43 05 3 06 57	18	C	
9	A		29 42 05 2 06 58	19	D	
10	B		30 40 05 0 07 0	20	E	
11	C		1 38 04 57 07 3	21	F	
12	D		2 37 04 55 07 5	22	G	
13	E		3 35 04 53 07 7	23	A	
14	F		4 33 04 51 07 9	24	B	
15	G		5 31 04 49 07 11	25	C	
16	A		6 29 04 47 07 13	26	D	
17	B		7 27 04 45 07 15	27	E	
18	C		8 25 04 43 07 17	28	F	
19	D		9 23 04 41 07 19	29	G	
20	E		10 21 04 39 07 21	30	A	
21	F		11 19 04 38 07 22	May	B	
22	G		12 17 04 36 07 24	2	C	
23	A	S George	13 15 04 34 07 26	3	D	
24	B		14 13 04 32 07 28	4	E	
25	C	Mark Evang	15 11 04 30 07 30	5	F	
26	D		16 9 04 28 07 32	6	G	
27	E	Rogation	17 7 04 27 07 33	7	A	
28	F		18 5 04 25 07 35	8	B	
29	G		19 3 04 23 07 37	9	C	
30	A		20 0 04 21 07 39	10	D	

May XXXI dayes

Week dayes	Dom. Letter	Remarkable dayes	Suns place		Suns rising		Suns setting		Fortaine Account
1	B	Phill: & Jacob.	D	M	H	M	H	M	11
2	C		20	58	04	19	07	42	12
3	D	Plague in Lon 1665	21	56	04	17	07	43	13
4	E		22	53	04	15	07	45	14
5	F		23	51	04	14	07	46	15
6	G		24	48	04	12	07	48	16
7	A		25	46	04	11	07	49	17
8	B		26	44	04	10	07	50	18
9	C		27	41	04	8	07	52	19
10	D		28	39	04	7	07	53	20
11	E		29	36	04	6	07	54	21
12	F		II	34	04	4	07	56	22
13	G		1	31	04	3	07	57	23
14	A		2	29	04	2	07	58	24
15	B		3	26	04	0	08	0	25
16	C		4	21	03	59	08	1	26
17	D		5	21	03	58	08	2	27
18	E		6	18	03	57	08	3	28
19	F		7	16	03	56	08	4	29
20	G		8	12	03	55	08	5	30
21	A		9	10	03	53	08	7	31
22	B		10	8	03	52	08	8	31
23	C		11	5	03	51	08	9	June
24	D		12	2	03	50	08	10	2
25	E		13	0	03	49	08	11	3
26	F		13	57	03	48	08	12	4
27	G		14	54	03	47	08	13	5
28	A		15	51	03	46	08	14	6
29	B	K.Char. 2. Nat.	16	49	03	45	08	15	7
30	C		17	46	03	45	08	15	8
31	D		18	43	03	44	08	16	9
			19	40	03	43	08	17	10

June x x x dayes

Week dayes	Dom Letter	Remarkable dayes	Suns place		Suns rising		Suns setting		Foraine Account	
			D	M	H	M	H	M		
1	E		20	37	3	42	8	18	11	A
2	F		21	34	3	42	8	18	12	B
3	G		22	32	3	42	8	18	13	C
4	A		23	29	3	41	8	19	14	D
5	B		24	26	3	41	8	19	15	E
6	C		25	23	3	41	8	19	16	F
7	D		26	20	3	41	8	19	17	G
8	E		27	17	3	41	8	19	18	A
9	F		28	15	3	41	8	19	19	B
10	G		29	12	3	41	8	19	20	C
11	A	St Barnab.	69	0	3	41	8	19	21	D
12	B		1	6	3	41	8	19	22	E
13	C		2	3	3	41	8	19	23	F
14	D		3	0	3	41	8	19	24	G
15	E		4	57	3	41	8	19	25	A
16	F		5	55	3	41	8	19	26	B
17	G		6	51	3	41	8	19	27	C
18	A		7	48	3	41	8	19	28	D
19	B		8	46	3	42	8	18	29	E
20	C		9	43	3	42	8	18	30	F
21	D		10	40	3	42	8	18	July	G
22	E		11	37	3	43	8	17	2	A
23	F		12	34	3	44	8	16	3	B
24	G	St Iohn Bap	13	31	3	44	8	16	4	C
25	A		13	28	3	45	8	15	5	D
26	B		14	25	3	46	8	14	6	E
27	C		15	22	3	47	8	13	7	F
28	D		16	20	3	48	8	12	8	C
29	E	S Peter Apol	17	17	3	49	8	11	9	D
30	F	Com. Paul	18	14	3	50	8	10	10	E

July XXXI dayes

Week dayes	Dom. Letter	Remarkable dayes	Suns place		Suns rising		Suns setting		Forraine Account	
			D	M	H	M	H	M		
1	C		19	11	03	51	08	9	11	C
2	A		20	8	03	51	08	8	12	D
3	B		21	5	03	52	08	8	13	E
4	C		22	2	03	53	08	7	14	F
5	D		23	0	03	54	08	6	15	G
6	E		23	57	03	56	08	4	16	A
7	F		24	54	03	57	08	3	17	B
8	G		25	51	03	58	08	2	18	C
9	A		26	48	03	59	08	1	19	D
10	B		27	46	04	0	08	0	20	E
11	C		28	43	04	2	07	58	21	F
12	D		29	40	04	3	07	57	22	G
13	E		30	37	04	4	07	50	25	A
14	F		1	35	04	6	07	54	24	B
15	G	S Swirhins	2	32	04	7	07	53	25	C
16	A		3	30	04	8	07	52	26	D
17	B		4	27	04	10	07	50	27	E
18	C		5	24	04	11	07	49	28	F
19	D	Dogg dayes beg	6	21	04	12	07	48	29	G
20	E		7	19	04	14	07	46	30	A
21	F		8	16	04	15	07	45	31	B
22	G		9	13	04	17	07	43	Aug	C
23	A		10	11	04	18	07	42	2	D
24	B		11	8	04	20	07	40	3	E
25	C	St James Apost	12	0	04	22	07	38	4	F
26	D		13	3	04	23	07	37	5	G
27	E		14	1	04	25	07	35	6	A
28	F		14	8	04	27	07	33	7	B
29	G		15	6	04	28	07	32	8	C
30	A		16	3	04	30	07	30	9	D
31	B		17	1	04	32	07	28	10	E

August XXXI dayes

Weeks dayes	Dom Letter	Remarkable dayes	Suns place		Suns rising		Suns setting		Forraine Account	
			D	M	H	M	H	M		
1	C	Lammas	18	48	04	35	07	26	11	F
2	D	Stephen Mart	19	46	04	36	07	24	12	G
3	E		20	41	04	38	07	22	13	A
4	F		21	41	04	40	07	20	14	B
5	G		22	39	04	41	07	19	15	C
6	A		23	37	04	43	07	17	16	D
7	B		24	36	04	45	07	15	17	E
8	C		25	32	04	47	07	13	18	F
9	D		26	30	04	48	07	12	19	G
10	E		27	28	04	50	07	10	20	A
11	F		28	26	04	52	07	8	21	B
12	G		29	24	04	54	07	6	22	C
13	A		30	22	04	56	07	4	23	D
14	B		1	19	04	58	07	2	24	E
15	C		2	17	05	0	07	0	25	F
16	D		3	15	05	2	06	58	26	G
17	E		4	13	05	4	06	56	27	A
18	F		5	11	05	6	06	54	28	B
19	G		6	9	05	8	06	52	29	C
20	A		7	8	05	10	06	50	30	D
21	B		8	6	05	12	06	48	31	E
22	C		9	4	05	14	06	46	32	F
23	D		10	2	05	16	06	44	33	G
24	E	Barth Apostle	11	0	05	18	06	42	34	A
25	F		11	58	05	20	06	40	35	B
26	G		12	57	05	22	06	38	36	C
27	A	Dogg dayes end	13	55	05	24	06	36	37	D
28	B		14	53	05	26	06	34	38	E
29	C		15	52	05	28	06	32	39	F
30	D		16	50	05	30	06	30	40	G
31	E		17	49	05	32	06	28	41	A

Septemb xxx dayes.

Week dayes	Dom Letter	Remarkable dayes	Suns place		Suns rising		Suns setting		Forrain Account	
1	F	Lond burnt 1655	D	M	H	M	H	M		B
2	G		18	47	05	35	06	25	11	C
3	A		19	16	05	37	06	23	12	D
4	B		20	44	05	39	06	21	13	E
5	C		21	43	05	41	06	19	14	F
6	D		22	41	05	43	06	17	15	G
7	E		23	40	05	45	06	15	16	A
8	F		24	39	05	47	06	13	17	B
9	G		25	37	05	49	06	11	18	C
10	A		26	30	05	51	06	9	19	D
11	B		27	35	05	53	06	7	20	E
12	C		28	34	05	56	06	4	21	F
13	D		29	35	05	58	06	2	22	G
14	E	Mathew Apolt	<u>1</u>	31	06	0	06	0	23	A
15	F		1	30	06	2	05	58	24	B
16	G		2	29	06	4	05	56	25	C
17	A		3	18	06	6	05	54	26	D
18	B		4	27	06	9	05	51	27	E
19	C		5	26	06	11	05	49	28	F
20	D		6	25	06	13	05	47	29	G
21	E		7	25	06	15	05	45	30	A
22	F		8	24	06	17	05	43	31	B
23	G		9	23	06	19	05	41	32	C
24	A		10	22	06	21	05	39	33	D
25	B		11	22	06	23	05	37	34	E
26	C	S Michael	12	21	06	25	05	35	35	F
27	D		13	20	06	27	05	33	36	G
28	E		14	20	06	29	05	31	37	A
29	F		15	19	06	31	05	29	38	B
30	G		16	19	06	33	05	27	39	C
			17	18	06	35	05	25	40	

Octob. XXXI dayes

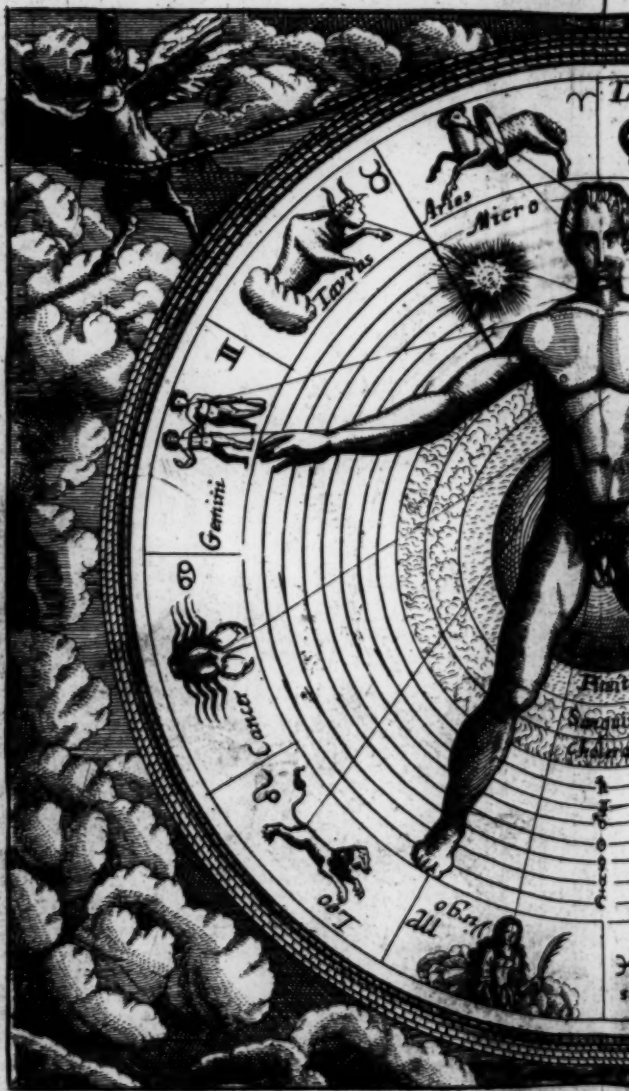
Week dayes		Dom. Letter	Remarkable dayes	Suns place	Suns rising	Suns setting	Fortnight Account
				D M H M H M			
1	B	1		18 18 06 38 05 22	11	D	
2	C	2		19 17 06 40 05 20	12	E	
3	D	3		20 17 06 42 05 18	13	F	
4	E	4		21 16 06 44 05 16	14	G	
5	F	5		22 16 06 46 05 14	15	A	
6	G	6		23 16 06 48 05 12	16	B	
7	A	7		24 16 06 50 05 10	17	C	
8	B	8		25 15 06 52 05 8	18	D	
9	C	9		26 15 06 54 05 0	19	E	
10	D	10		27 15 06 56 05 4	20	F	
11	E	11		28 15 06 58 05 2	21	G	
12	F	12		29 15 07 0 05 0	22	A	
13	G	13		M 15 07 2 04 58	23	B	
14	A	14		1 15 07 4 04 56	24	C	
15	B	15	Jewes Feast	2 15 07 6 04 54	25	D	
16	C	16		3 15 07 8 04 52	26	E	
17	D	17		4 15 07 10 04 50	27	F	
18	E	18	Luke Evang	5 15 07 12 04 48	28	G	
19	F	19		6 15 07 14 04 46	29	A	
20	G	20		7 16 07 16 04 44	30	B	
21	A	21		8 16 07 18 04 42	31	C	
22	B	22		9 16 07 20 04 40	Nov 1	D	
23	C	23		10 16 07 22 04 38	2	E	
24	D	24		11 17 07 23 04 37	3	F	
25	E	25		12 17 07 25 04 35	4	G	
26	F	26		13 18 07 27 04 33	5	A	
27	G	27		14 18 07 29 04 31	6	B	
28	A	28	Simon & Jude	15 19 07 31 04 29	7	C	
29	B	29		16 19 07 33 04 27	8	D	
30	C	30		17 19 07 34 04 26	9	E	
31		31		18 20 07 36 04 24	10	F	

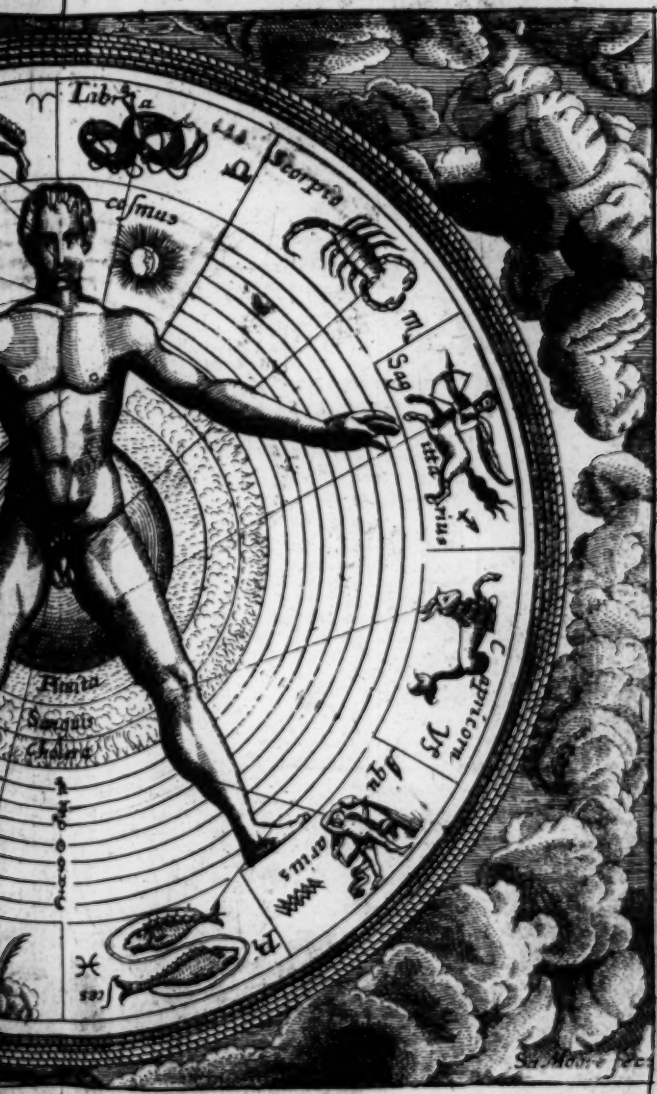
Novemb xxx dayes

Week dayes	Dom Letter	Remarkable dayes	Suns place		Suns rising		Suns setting		Torrins Account	
			D	M	H	M	H	M		
1	D	All Saints	19	21	07	38	04	22	11	G
2	E	All Souls	20	21	07	39	04	21	12	A
3	F		21	22	07	41	04	19	13	B
4	G		22	23	07	42	04	18	14	C
5	A	Papists Conspi	23	23	07	44	04	16	15	D
6	B		24	21	07	46	04	14	16	E
7	C		25	25	07	47	04	13	17	F
8	D		26	20	07	49	04	11	18	G
9	E		27	26	07	51	04	9	19	A
10	F		28	27	07	52	04	8	20	B
11	G		29	28	07	53	04	6	21	C
12	A		1	29	07	55	04	5	22	D
13	B		1	30	07	57	04	3	23	E
14	C		2	31	07	58	04	2	24	F
15	D		3	32	08	0	04	0	25	G
16	E		4	33	08	1	03	59	26	A
17	F		5	34	08	3	03	57	27	B
18	G		6	35	08	4	03	56	28	C
19	A		7	36	08	5	03	55	29	D
20	B		8	37	08	7	03	53	30	E
21	C		9	38	08	8	03	52	1	F
22	D		10	39	08	9	03	51	2	G
23	E		11	40	08	10	03	50	3	A
24	F		12	41	08	11	03	49	4	B
25	G		13	42	08	12	03	48	5	C
26	A	appeared in Lon	14	43	08	12	03	48	6	D
27	B	a Comet 1664	15	45	08	13	03	47	7	E
28	C	Term ends	16	46	08	14	03	46	8	F
29	D		17	47	08	14	03	46	9	G
30	E	Andrew Apost.	18	48	08	15	03	45	10	A

Decemb xxxi dayes

Week days	Dom Letter	Remarkable dayes	Suns place		Suns rising		Suns setting		Extreme Account	
			D	M	H	M	H	M		
1	G		19	00	8	16	3	44	11	B
2	A		20	51	8	16	3	44	12	C
3	B		21	52	8	17	3	43	13	D
4	C		22	53	8	17	3	43	14	E
5	D		23	54	8	18	3	42	15	F
6	E		24	56	8	18	3	42	16	G
7	F		25	57	8	18	3	42	17	A
8	G	Concep: Mary	26	58	8	19	3	41	18	B
9	A		28	0	8	19	3	41	19	C
10	B		29	1	8	19	3	41	20	D
11	C	Shortest day	30	2	8	19	3	41	21	E
12	D		1	3	8	19	3	41	22	F
13	E		2	5	8	19	3	41	23	G
14	F		3	6	8	19	3	41	24	A
15	G		4	7	8	19	3	41	25	B
16	A		5	9	8	18	3	42	26	C
17	B		6	10	8	18	3	42	27	D
18	C		7	11	8	18	3	42	28	E
19	D		8	13	8	17	3	43	29	F
20	E		9	14	8	17	3	43	30	G
21	F	Tho: Apost	10	15	8	16	3	44	31	A
22	G		11	17	8	16	3	44		
23	A		12	18	8	15	3	45	2	C
24	B		13	19	8	14	3	46	3	D
25	C	Christmas day	14	21	8	14	3	46	4	E
26	D	Stephen	15	22	8	13	3	47	5	F
27	E	Iohn Evang	16	23	8	12	3	48	6	G
28	F	Innocents day	17	25	8	12	3	48	7	A
29	G		18	26	8	11	3	49	8	B
30	A		19	27	8	10	3	50	9	C
31			20	28	8	9	3	51	10	D







The Description and Use of the Thirty-Years Almanack.

E Ach Month containeth 8 Columns ; the first shews the days of the Month, the second (having the Dominical Letters) shews the days of the Week, the third shews several remarkable Passages that have hapned in *England*, principally since the year 1640. the fourth shews the place of the Sun every day of the year, the fifth shews the Rising of the Sun, the sixth the Setting of the Sun, the seventh shews the Days of the Month according to the Forreign Account, the eighth shews the Week Days according to the same Account.

The Examples of the Use of each Column.

1. To know the Day of the Month.

This is the chief and most useful Observation of any Almanack, and may as well be performed by this as by any other. To this purpose, you must first know the Dominical, or Sunday Letter, for the Year proposed ; which you may easily find by the Table in the first Page following the Almanack, or by the Circular Table mark'd with the figure 1. Which having found the Dominical Letter for the Year required, then considering with your self, whether the day of the month you seek for be in the beginning, middle, or end of the month ; then from the Dominical, or Sunday Letter found, reckon from it to the day of the week proposed, either

A

Monday,

Monday, Tuesday, or any other day whatsoever it is; and right against that day of the week, you shall find the day of the month.

Only note; That if there be two Dominical Letters (as you will have in every Leap-Year) then the first of them you must use only to the 24 day of *February*, and the other all the Year after.

As for Example.

In the Year 1680 (being Leap-Year) the Dominical Letters are D C; therefore the first Sunday in *January* is the 4th day of the month; the first Sunday in *February* is the first day of the month; but the first Sunday in *March* is on the 7th day: The same is to be understood all the Year after.

2. *To know what day of the Week any Notable Day will fall upon in any Year.*

First find the Dominical Letter, (as is before directed) then look for the same in the month required, next before the day you desire, and so from thence count the days of the week till you come to the day desired.

Example.

If you would know what day of the week *Lady-Day* (or the *Annunciation of the Blessed Virgin*) falls on in the Year 1681: the Dominical Letter is B, which is five days before the said day; therefore it falls on a *Friday* that Year.

3. *To find the Sun's place in the Ecliptick.*

The Sun's Place is shewed in the third Column of the Almanack, wherein you will find two Columns of figures; the first shews the Degrees, and the second the

the Minutes of any Sign that the Sun is in, and the Character of the Sign you will have in the same Column. As in the Month of *January*, right against the 11th day of the month, you will find the Sun to be in 1 degree 57 minutes in *Aquarius*: The same is to be understood of the rest.

4. To find the Rising and Setting of the Sun.

The Rising and Setting of the Sun you will find in the fourth and fifth Columns of the Almanack, under their proper Titles; each Column hath two smaller Columns of figures, the first shews the hours, and the second the minutes of the Suns rising or setting. As for instance, Right against the 11th of *January* you will find, in the Column under the Title of Sun Rising, 07: 55; which shews that the Sun riseth at 55 minutes past 7 of the Clock in the Morning. And in the next Column, under the Title of Suns Setting, you will find 4-- 5, which shews that the Sun sets at 5 min. past 4 in the evening.

And here note, If you double the rising of the Sun, it shews the length of the Night; and if you double the setting of the Sun, it will shew you the length of the day.

As in this Example.

If you double 7 hours and 55 min. it makes 15 hours and 50 min. which is the length of the Night: And if you double the hours of Suns setting, being 4 hours 5 min. it makes 8 hours 10 min. the length of the day; which hours and minutes of the length of the Day and Night makes just 24.

5. *The use of the Tables in the first Page that follows the Almanack, for finding the Dominical Letter, Golden Number, Epact, and Cycle of the Sun, &c.*

These Tables are contained in five Columns; the first shews the Year of our Lord, the second the Dominical Letter, the third the Golden Number, the fourth the Epact, the fifth the Circle of the Sun. The Dominical Letter is useful for finding the day of the Month, as hath been already shewn; the Golden Number for finding of *Easter-day*, and other useful things, as shall be shewn in their place; the Epact for finding the Age of the Moon; and the Circle of the Sun, for finding the Dominical or Sunday Letters.

6. *The Use of the Table in the second Page after the Almanack, for finding Easter-day for ever, by knowing the Golden Number, and the Dominical Letter.*

Having found the Golden Number by the precedent Table, as also the Dominical Letter, then seek the Golden Number in the first Column of this Table on the left hand, and the Dominical Letter on the head of the Table; and in the common Angle of meeting of these 2 lines, you shall find the Month and Day *Easter* will fall on that Year, without any further trouble.

Example.

In the Year 1682, the Golden Number is 11, and the Dominical Letter A. I find 11 in the first row on the left hand; against which, towards the right hand, under the Letter A, I find that *Easter-day* will be that Year on April 16.

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*A Tide Table (by knowing the Moons age) to finde
the time of high water at those Places following.*

Moons Age	Quilborough Portsmouth S. Hampton		Rochester Malden Aberdeen		Graysend Downes Silly 1/2 Tide		Dundee Lyboun S. Lucia's		London Finnmouth Whithow		Barwick Fleambridge Bridlington		Scarborough Cork haven Dunquharvan		Newcastle Aberdeen Dartmouth	
	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M
1 16	12.48	01.33	02.18	03.03	03.48	04.33	05.18	06.03	06.48	07.33	08.18	09.03	09.48	10.33	11.18	12.03
2 17	01.36	02.21	03.06	03.51	04.36	05.21	06.06	06.51	07.36	08.21	09.06	09.51	10.36	11.21	12.06	12.51
3 18	02.24	03.09	03.54	04.39	05.24	06.09	06.54	07.39	08.24	09.09	09.54	10.39	11.24	12.09	12.54	01.39
4 19	03.12	03.57	04.42	05.27	06.12	06.57	07.42	08.27	09.12	09.57	10.42	11.27	12.12	12.57	01.42	02.27
5 20	04.00	04.45	05.30	06.15	07.00	07.45	08.30	09.15	10.00	10.45	11.30	12.15	01.00	01.45	02.30	03.15
6 21	04.48	05.33	06.18	07.03	07.48	08.33	09.18	10.03	10.48	11.33	12.18	01.03	01.48	02.33	03.18	04.03
7 22	05.36	06.21	07.06	07.51	08.36	09.21	10.06	10.51	11.36	12.21	01.06	01.51	02.36	03.21	04.06	04.51
8 23	06.24	07.09	07.54	08.39	09.24	10.09	10.54	11.39	12.24	01.09	01.54	02.39	03.24	04.09	04.54	05.39
9 24	07.12	07.57	08.42	09.27	10.12	10.57	11.42	12.27	01.12	01.57	02.42	03.27	04.12	04.57	05.42	06.27
10 25	08.00	08.45	09.30	10.15	11.00	11.45	12.30	01.15	02.00	02.45	03.30	04.15	05.00	05.45	06.30	07.15
11 26	08.48	09.33	10.18	11.03	11.48	12.33	01.18	02.03	02.48	03.33	04.18	05.03	05.48	06.33	07.18	08.03
12 27	09.36	10.21	11.06	11.51	12.36	01.21	02.06	02.51	03.36	04.21	05.06	05.51	06.36	07.21	08.06	08.51
13 28	10.24	11.09	11.54	12.39	01.24	02.09	02.54	03.39	04.24	05.09	05.54	06.39	07.24	08.09	08.54	09.39
14 29	11.12	11.57	12.42	01.27	02.12	02.57	03.42	04.27	05.12	05.57	06.42	07.27	08.12	08.57	09.42	10.27
15 30	12.00	12.45	01.30	02.15	03.00	03.45	04.30	05.15	06.00	06.45	07.30	08.15	09.00	09.45	10.30	11.15

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A plain and easie Table Shewing the true interest
 due upon any sum of money from five shillings to
 an Hundred pounds for a Year or under
 after the Rate of six Pounds
 in the Hundred

		1 Mon	3 Mon	6 Mon	9 Mon	A year
		sh p q	sh p q	sh p q	sh p q	sh p q
Shill	5	0.0.1	0.0.5	0.1.3	0.2.2	0.3.2
	10	0.0.2	0.1.5	0.3.2	0.5.2	0.7.0
	15	0.0.5	0.2.2	0.5.1	0.8.0	0.10.2
Pounds	1	0.1.0	0.3.2	0.7.0	0.10.2	1.2.1
	2	0.2.1	0.7.0	1.2.1	1.9.1	2.4.2
	3	0.3.2	0.10.2	1.9.1	2.7.3	3.6.3
	4	0.4.3	1.2.1	2.4.2	3.6.3	4.9.0
	5	0.6.0	1.6.0	3.0.0	4.0.6	6.0.0
	6	0.7.0	1.9.2	3.7.0	5.4.2	7.2.1
	7	0.8.1	2.1.0	4.2.1	6.3.1	8.4.2
	8	0.9.2	2.4.2	4.9.1	7.1.3	9.6.3
	9	0.10.5	2.8.1	5.4.2	8.0.3	10.9.0
		po.sh.p	po.sh.p	po.sh.p	po.sh.p	po.sh.p
Tens of pounds	10	0.1.0	0.3.0	0.6.0	0.9.0	0.12.0
	20	0.2.0	0.6.0	0.12.0	0.18.0	1.4.0
	30	0.3.0	0.9.0	0.18.0	1.7.0	1.16.0
	40	0.4.0	0.12.0	1.4.0	1.16.0	2.8.0
	50	0.5.0	0.15.0	1.10.0	2.5.0	3.0.0
	60	0.6.0	0.18.0	1.16.0	2.14.0	3.12.0
	70	0.7.0	1.1.0	2.2.0	3.3.0	4.4.0
	80	0.8.0	1.4.0	2.8.0	3.12.0	4.16.0
	90	0.9.0	1.7.0	2.14.0	4.1.0	5.8.0
	100	0.10.0	1.10.0	3.0.0	4.10.0	6.0.0

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The Use of the Table of Interest.

This Table is so plain it needs little Explanation ; But I shall give one Example.

Suppose I would know what the Interest of 115 *l.* comes to for 9 months, (at 6 *per Cent.* for which the Table is made) ; first, look for 100 *l.* which I find at the bottom of the Table in the second Column ; and under the title of 9 months, I find 4 *l.* 10 *s.* 0 *d.* in the next I look for 15 *l.* but not finding it in the Table, I take it out at twice, first 10 *l.* and then 5 *l.* : against 10 *l.* for 9 months, I find 9 *s.* and against 5 *l.* under 9 months, I find 4 *s.* 6 *d.* which being added altogether, makes 5 *l.* 12 *s.* 6 *d.* which is the Interest for 115 *l.* for 9 months.

The Use of the Tide-Table,

The Use of this Table, is to find the time of High-Water at all those places, exprest at the top of the Table. The Moons Age being first known ; for the knowledg of which I refer you to the Tables of the Moons Age for each respective Year. Then the Moons Age being known, find the same in the left hand Column, and under the place requied you will find the time of High-Water.

As for Example,

To find the time of High-Water at *London-Bridge* the 15th of *December*. In the Year 1679, the 15th day of *December*, I find the Age of the Moon by the Table of the Moons Age for that Year, and I find it to be 23 days old ; which number I seek in the first Column of the Table, and in the sixth Column, under the Title of *London*, &c. I find it to be High-Water at 9 a Clock and 24 min. past.

The

The Use of the Regal Table.

This Table is divided into 2 Columns; the first sheweth the Kings of *England* before the Conquest, and the second sheweth the Kings since the Conquest, and the time when they began to reign: As for Example, K. *Edward* the IV. began his reign in the Year of our Lord 1460.

The Use of the Table of the Lord Mayors and Sheriffs since the Year 1660, (the Year of his Majesties Restauration.)

By this Table you may find what Year each Lord Mayor served the City of *London* in that honourable Employment, as also the Sheriffs. If you would know who was Lord-Mayor and Sheriffs for the Year 1666, look the Year 1666 in the first Column, and right against it you will find Sir *Thomas Bludworth* Lord Mayor, and Sir *Robert Hanson* and Sir *William Hooker* Sheriffs for the same Year.

The Use of the Table of New and Full Moons.

On the left side of the Table you have each Month in the Year; and on the head of the Table you have the Years of our Lord, and the Characters of the New and Full Moons; The New Moon is thus exprest ☉, the Full Moon thus ○. The Use of which Table will appear plainly by this Example.

I would know the time of the New and Full Moon; for the Year 1680, therefore look at the head of the Table, and on the left side for the Month of *May*, and

in the common Angle of meeting you will find that it is New Moon the 18th day, and Full Moon the 31 day ; so from the Full and Change you may compute any other day of her Age. And if you would know the time of High Water at *London*, (or any other place contained in the Table) then look the day of her Age on the left side of the Table, (as you are before directed) and right against it you will find the time of High Water.

The Use of the Circular Table, marked at the Corner with the Figure 1.

This Table sheweth the Dominical Letter, Cycle of the Sun, Epact, and Golden Number, for 56 years, from the Year 1676.

For finding the Dominical Letter, and Cycle of the Sun, you are first to seek the Year of the Lord in the two outermost Circles ; and in the two next Circles within those Circles, you have the Dominical Letter, and the number of the Suns Cycle.

For Example.

If you would know, in the years 1700, and 1728, what the Dominical Letter, and Cycle of the Sun is ; you will find the Dominical Letters to be G F, which doth denote it to be Leap-Year, and the Cycle of the Sun to be 1. And if you would find the Epact, and Golden Number, for any Year contained in the Table, then find the years required in the 5th and 6th Circle, and in the Innermost Circles you will have your desire ; as for the years 1681, and 1700, you will find the Epact to be 2, and the Golden Number to be 10.

And here I think it necessary to shew the natural reason of these Numbers and Letters.

of

Of the Prime, or Golden Number.

The Prime, or Golden Number, is a Circle, or Revolution of 19 years; in which space of time it was supposed by the Ancients, that all the Lunations and Aspects between the Sun and Moon, did return to the same place they were 19 years before: It is chiefly to find the Change, Full, and Quarters of the Moon.

Of the Cycle of the Sun, and Dominical Letter.

The Cycle, or Circle of the Sun, is a Revolutional Number of 28 years; in which space of time there is a perfect change of all the Sunday Letters for every Year, and maketh its Periodical Revolution in 28 years. By help of which is known the true order of the Sunday Letter, A, being placed against the first day of *January*, and the rest in their order to the Years end: And every Month beginneth the first Letter of each word in this short Distict;

*At Dover Dwells George Brown Esquire,
Good Christopher Finch, And David Frier.*

Of the Epact.

The Epact is a Number not exceeding 30, because the Moon, between Change and Change, never exceeds 30 days; and thereby the common Lunar Year, consisting of 12 Months, is less than the Solar Year by 11 days; for to every Lunar Month is accounted but 29 days and a half, so that a Lunar Year contains 354 days, and the Solar Year consists of 365 days; the difference is 11 days, which is called the Epact.

Short

A Perpetual Almanack

For findeing the day of the Month for ever, For time Past, Present, And to come . By Iohn Seller.

January	February	March	April	May	June
At	Dover	Dwells	George	Browne	Esquire
Good	Christoph	Finch	And	David	Fryer
July .	August .	Septem.	October	Novem :	Decemb :

To find the Dom: Letter for ever

C ₁	E ₁	G ₁	B ₁	D ₁	F ₁	A ₁
B ₂	D ₂	F ₂	A ₂	C ₂	E ₂	G ₂
A ₃	C ₃	E ₃	G ₃	B ₃	D ₃	F ₃
GF	BA	DC	FE	AG	CB	ED
1000	1200	1400	1600	1100	1300	1500
1616	20	24	28	32	36	40
44	48	52	56	60	64	68
72	76	80	84	88	92	96
1700	4	8	12	16	20	24
28	32	36	40	44	48	52
2400	1900	2100	2300	1800	2000	2200

High water at the bridge	Moons age	The Moons touching .	Moons age for her / him	To find the day of the Month				
3—48	1—16	0—48	1—29	1	8	15	22	29
4—36	2—17	1—36	2—28	2	9	16	23	30
5—24	3—18	2—24	3—27	3	10	17	24	31
6—12	4—19	3—12	4—26	4	11	18	25	
7—0	5—20	4—00	5—25	5	12	19	26	
7—48	6—21	4—48	6—24	6	13	20	27	
8—36	7—22	5—36	7—23	7	14	21	28	
9—24	8—23	6—24	8—22					
10—12	9—24	7—12	9—21					
11—0	10—25	8—00	10—20					
11—48	11—26	8—48	11—19					
12—36	12—27	9—36	12—18					
1—24	13—28	10—24	13—17					
2—12	14—29	11—12	14—16					
3—0	15—30	12—00	15—15					

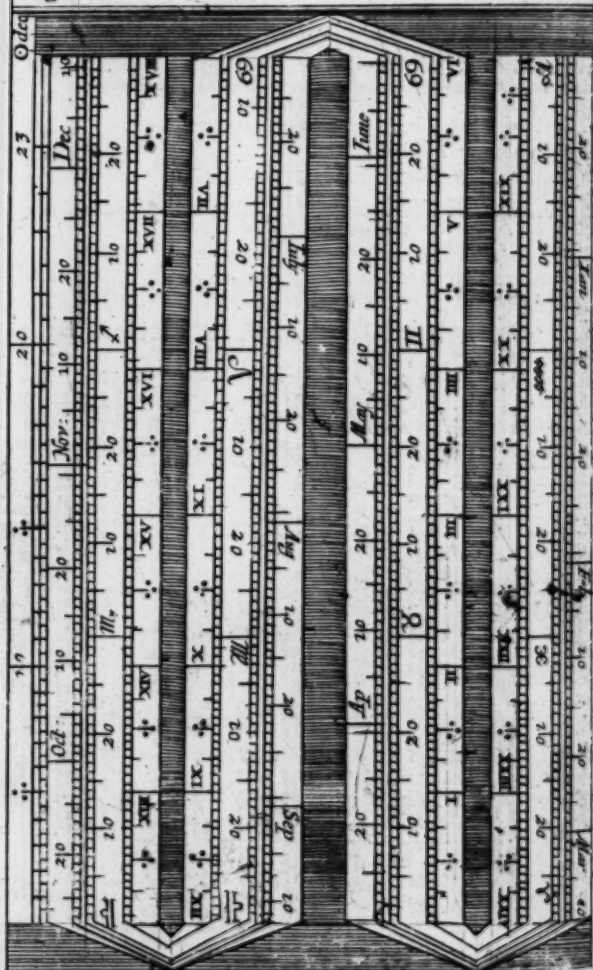
A Table to finde y^e moveable

Dominical Letter	Golden Numbe	From Christ to Shrove	Shrove Sunday	Easter day
A	2. 5. 13. 16.	6 weeks		Febr: 5 Mar: 26
	7. 10. 15. 18.	7 weeks		Febr: 12 Apr: 3
	1. 4. 9. 12.	8 weeks		Febr: 19 Apr: 10
	3. 6. 11. 14.	9 weeks		Febr: 26 Apr: 16
	8. 10.	10 weeks		Mar: 5 Apr: 23
B	2. 5. 13. 16.	6 weeks	1 day	Febr: 6 Mar: 27
	7. 10. 15. 18.	7 weeks	1 day	Febr: 13 Apr: 4
	1. 4. 9. 12.	8 weeks	1 day	Febr: 20 Apr: 11
	3. 6. 11. 14.	9 weeks	1 day	Febr: 27 Apr: 18
	8. 10.	10 weeks	1 day	Mar: 6 Apr: 24
C	2. 5. 13. 16.	6 weeks	2 days	Febr: 7 Mar: 28
	7. 10. 15. 18.	7 weeks	2 days	Febr: 14 Apr: 5
	1. 4. 9. 12.	8 weeks	2 days	Febr: 21 Apr: 12
	3. 6. 11. 14.	9 weeks	2 days	Febr: 28 Apr: 19
	8.	10 weeks	2 days	Mar: 7 Apr: 25
D	10.	5 weeks	3 days	Febr: 1 Mar: 29
	2. 5. 10. 13.	6 weeks	3 days	Febr: 8 Mar: 29
	7. 12. 15. 18.	7 weeks	3 days	Febr: 15 Apr: 6
	1. 6. 9. 12.	8 weeks	3 days	Febr: 22 Apr: 13
	3. 8. 11. 14.	9 weeks	3 days	Mar: 1 Apr: 20
E	5. 10.	5 weeks	4 days	Febr: 2 Mar: 27
	3. 10. 13. 18.	6 weeks	4 days	Febr: 9 Mar: 27
	14. 7. 12. 15.	7 weeks	4 days	Febr: 16 Apr: 6
	6. 9. 12. 17.	8 weeks	4 days	Febr: 23 Apr: 13
	3. 8. 11. 19.	9 weeks	4 days	Mar: 2 Apr: 20
F	5. 10.	5 weeks	5 days	Febr: 3 Mar: 28
	2. 7. 10. 13. 18.	6 weeks	5 days	Febr: 10 Mar: 28
	1. 4. 12. 15.	7 weeks	5 days	Febr: 17 Apr: 7
	3. 6. 9. 12. 17.	8 weeks	5 days	Febr: 24 Apr: 14
	8. 11. 19.	9 weeks	5 days	Mar: 3 Apr: 21
G	5. 13. 16.	5 weeks	6 days	Febr: 11 Mar: 29
	7. 7. 10. 18.	6 weeks	6 days	Febr: 18 Apr: 8
	1. 4. 9. 12. 15.	7 weeks	6 days	Febr: 25 Apr: 15
	3. 6. 11. 17.	8 weeks	6 days	Febr: 25 Apr: 22
	8. 11. 19.	9 weeks	6 days	Mar: 4 Apr: 22

Feasts for ever by the Dominical letter and Golden Number.

After day.	Rogation Sund:	Ascension day:	Whit Sund:	Trinity Sund:	Advent Sund:
Apr: 26	May 30	May 4	May 14	May 21	Dec: 3
Apr: 27	May 7	May 11	May 21	May 28	Dec: 3
Apr: 28	May 14	May 18	May 28	June 4	Dec: 3
Apr: 29	May 21	May 15	June 4	June 11	Dec: 3
Apr: 30	May 28	June 1	June 11	June 18	Dec: 3
May: 1	May 1	May 5	May 15	May 22	Nov: 27
May: 2	May 8	May 12	May 22	May 29	Nov: 27
May: 3	May 15	May 19	May 29	June 5	Nov: 27
May: 4	May 22	May 26	June 5	June 12	Nov: 27
May: 5	May 29	June 2	June 12	June 19	Nov: 27
May: 6	May 2	May 6	May 16	May 23	Nov: 28
May: 7	May 9	May 13	May 23	May 30	Nov: 28
May: 8	May 16	May 20	May 30	June 6	Nov: 28
May: 9	May 23	May 27	June 6	June 13	Nov: 28
May: 10	May 30	June 3	June 13	June 20	Nov: 28
May: 11	Apr: 26	Apr: 30	May 10	May 17	Nov: 29
May: 12	May 3	May 7	May 17	May 24	Nov: 29
May: 13	May 10	May 14	May 24	May 31	Nov: 29
May: 14	May 17	May 21	May 31	June 7	Nov: 29
May: 15	May 24	May 28	June 7	June 14	Nov: 29
May: 16	Apr: 27	May 1	May 11	May 18	Nov: 30
May: 17	May 4	May 8	May 18	May 25	Nov: 30
May: 18	May 11	May 15	May 25	June 1	Nov: 30
May: 19	May 18	May 22	May 1	June 8	Nov: 30
May: 20	May 25	May 29	June 8	June 15	Nov: 30
May: 21	Apr: 28	May 2	May 12	May 19	Dec: 1
May: 22	May 5	May 9	May 19	May 26	Dec: 1
May: 23	May 12	May 16	May 26	June 2	Dec: 1
May: 24	May 19	May 23	June 2	June 9	Dec: 1
May: 25	May 26	May 30	June 9	June 16	Dec: 1
May: 26	Apr: 29	May 3	May 13	May 20	Dec: 2
May: 27	May 6	May 10	May 20	May 27	Dec: 2
May: 28	May 13	May 17	May 27	June 3	Dec: 2
May: 29	May 20	May 24	June 3	June 10	Dec: 2
May: 30	May 27	May 31	June 10	June 17	Dec: 2

An Almanck Shewing the Day of the Month, Suns Place,
Right Ascension and Declination for ever: By John Seller.



ace,
eller.



The Initiating table for finding the beginning, and ending of the termes.

The Use of these tables.	prim	0	1	2	3	4	5	6
		A	B	C	D	E	F	G
By some of y ^e foregoing table you must find the Golden num ^r .	1	8	8	8	8	7	7	7
& Domi: letter.	2	6	6	6	6	6	6	6
for y ^e year proposed, with which you must enter this table finding y ^e Golden number in y ^e Margent on y ^e left hand, and y ^e Domi: let. on y ^e head of y ^e table.	3	9	9	9	9	9	8	8
& note what number you find in the Common angle of Meeting as also w ^h number is over the Domi: letter w ^h two numbers keep calling y ^e you found in the body of y ^e table Weeks and that in the head of the table dayes now to know how y ^e termes will fall, find y ^e two numbers in the Margent of y ^e other table vnder the title Intervallam minus; right against w ^h y ^e beginning & ending of y ^e termes.	4	8	7	7	7	7	7	7
As for Ex: ample in the year 1631 you will finde Easter Terme begins April the 20, and ends May the 16. trinitie terme begins May 30 & ends June the 18 And soe for the rest.	5	6	6	6	6	5	5	5
	6	9	9	8	8	8	8	8
	7	7	7	7	7	7	6	6
	8	10	10	10	9	9	9	9
	9	8	8	8	8	8	8	7
	10	7	7	6	6	6	6	6
	11	9	9	9	9	9	9	9
	12	8	8	8	7	7	7	7
	13	6	6	6	6	6	6	5
	14	9	9	9	9	8	8	6
	15	7	7	7	7	7	7	7
	16	6	6	6	5	5	5	5
	17	9	8	8	8	8	8	8
	18	7	7	7	7	7	6	6
	19	10	10	9	9	9	9	9

Anew and perpetuall Table, to find the beginning, and ending, of the four Termes.

Inter- min:	Easter Terme.		Trinitie Terme.		Michaelmas Terme.		Hillarie Terme.	
WD	begins	ends	beg	ends	begin	ends	begi	ends
5 3	Apr 8	May 4	May 22	June 10	October 9	November 28	January 23	February 12
5 4	9	5	23	11	9	28	23	12
5 5	10	6	24	12	9	28	23	12
5 6	11	7	25	13	9	28	23	12
6 0	12	8	26	14	9	28	23	13
6 1	13	9	27	15	10	28	24	12
6 2	14	10	28	16	9	29	23	12
6 3	15	11	20	17	9	28	23	12
6 4	16	12	30	18	9	28	23	12
6 5	17	13	31	19	9	28	23	12
6 6	18	14	June 1	20	9	28	23	12
7 0	19	15	2	21	9	28	24	13
7 1	20	16	3	22	10	28	23	12
7 2	21	17	4	23	9	29	23	12
7 3	22	18	5	24	9	28	23	12
7 4	23	19	6	25	9	28	23	12
7 6	24	20	7	26	9	28	23	12
7 5	25	21	8	27	9	28	23	12
8 6	26	22	9	28	9	28	23	13
8 1	27	23	10	29	10	28	24	12
8 2	28	24	11	30	9	29	23	12
8 3	29	25	12	July 1	9	28	23	12
8 4	30	26	13	2	9	28	23	12
8 5	May 1	27	14	3	9	28	23	12
8 6	2	28	15	4	9	28	23	12
9 0	3	29	16	5	9	28	23	13
9 1	4	30	17	6	10	28	24	12
9 2	5	31	18	7	9	29	23	12
9 3	6	June 1	19	8	9	28	23	12
9 4	7	2	20	9	9	28	23	12
9 5	8	3	21	10	9	28	23	12
9 6	9	4	22	11	9	28	23	12
10 0	10	5	23	12	9	28	23	12
10 1	11	6	24	13	10	28	24	12
10 2	12	7	25	14	9	29	23	12

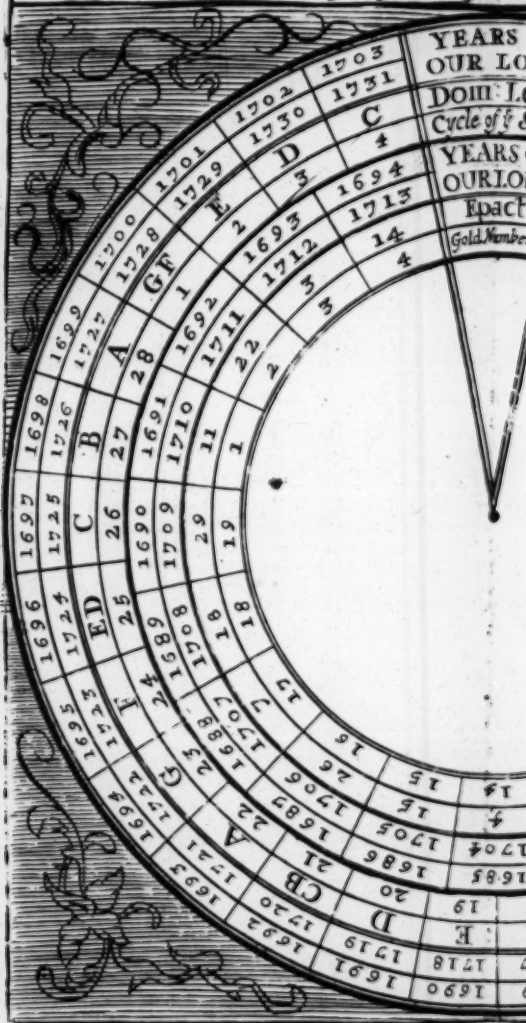
<i>Kings of England before the Conquest</i>		<i>Kings of England since the Conquest</i>	
	An. Mut.	THE NORMAN LINE	
Brute	1830	William the Conq ^r	1066
Memprick	1894	William Rufus	1087
Bladud	3100	Henry I	1100
		Stephen	1155
		SAXON LINE RESTORED	
Dunwallo	3522	Henry II	1145
Belinus	3562	Richard I	1189
Lud	3801	John	1199
Caſibellane	3895	Henry III	1216
		Edward I	1273
		Edward II	1307
	An. Ch.	Edward III	1316
Arviragus	45	Richard II	1377
Lucius	180	LINE OF LANCASTER	
Constantine	310	Henry III	1309
Constantine	340	Henry V	1412
		Henry VI	1422
		LINE OF YORKE	
Vortiger	448	Edward IV	1460
Aurelius	482	Edward V	1483
Arthur	517	Richard III	1483
		<i>Union of the two Families</i>	
Egbert	800	Henry VII	1485
Ethelwolf	837	Henry VIII	1509
Alfred	872	Edward VI	1547
Canutus	1018	Queen Mary	1553
		Queen Elizabeth	1558
		<i>Union of the two Kingdoms</i>	
Edw Confeſſ	1042	James	1603
Harold	1066	Charles I	1625
		Charles II	1648

*A Table of the Lord-Mayors and Sheriffs
from the year 1600 to the year 1677.*

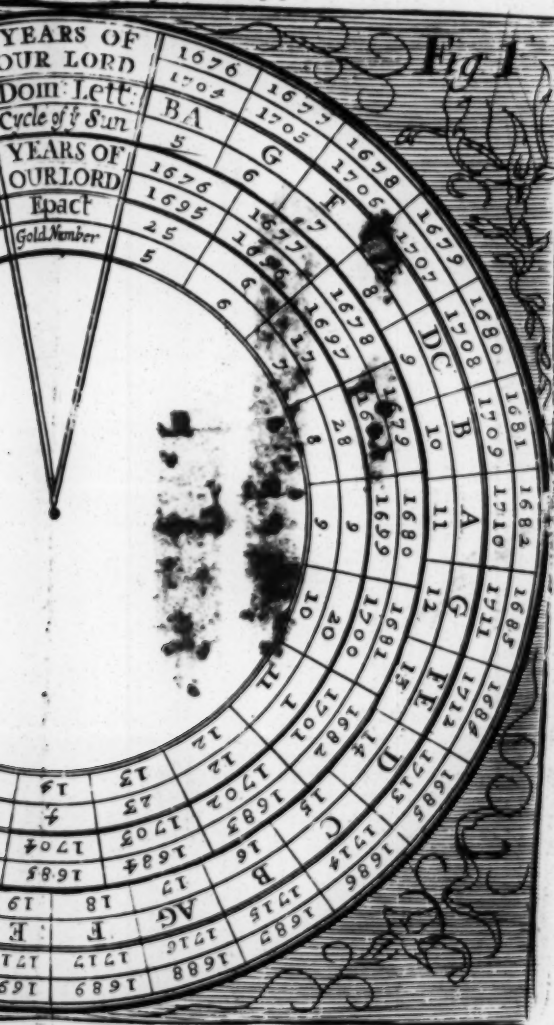
Anno Dom	Mayors	Sheriffs
1660	S ^r Tho. Allyn K ^t Bar ^t	{ Francis Warner } E ^{sq} ^r { William Gore } E ^{sq} ^r
1661	S ^r Rich. Browne K ^t —	{ S ^r W ^m Bolton } K ^r { S ^r W ^m Peake } K ^r
1662	S ^r Job. Fredrick K ^t —	{ Fran. Myrnell } E ^{sq} ^r { Sam. Starling } E ^{sq} ^r
1663	S ^r Job. Robinson K ^t Bar ^t	{ S ^r Tho. Bladworth } K ^r { S ^r W ^m Turner } K ^r
1664	S ^r Anth. Bateman K ^t —	{ S ^r Rich. Ford } K ^r { S ^r Rich. Ryces } K ^r
1665	S ^r Job. Lawrence K ^t —	{ S ^r Geor. Waterman } K ^r { S ^r Char. Doe } K ^r
1666	S ^r Tho. Bladworth K ^t —	{ S ^r Rob ^t Manson } K ^r { S ^r W ^m Hooker } K ^r
1667	S ^r W ^m Bolton K ^t —	{ S ^r Rob ^t Viner } K ^r Bar ^t { S ^r L ^d Sheldon } K ^r
1668	S ^r W ^m Peake K ^t —	{ S ^r Den. Gauden } K ^r { S ^r Tho. Davis } K ^r
1669	S ^r W ^m Turner K ^t —	{ M ^r Lo ⁿ Forth } E ^{sq} ^r { Fra. Chaplen } E ^{sq} ^r
1670	S ^r Sam. Starling K ^t —	{ S ^r Lo ⁿ Smith } E ^{sq} ^r { M ^r La. Edward } E ^{sq} ^r
1671	S ^r Rich. Ford K ^t —	{ Dan. Forth } E ^{sq} ^r { Pat. Ward } E ^{sq} ^r
1672	S ^r Geor. Waterman K ^t —	{ S ^r Length Davies } K ^r { S ^r Rob ^t Norton } K ^r { S ^r Lo ⁿ More } K ^r
1673	S ^r Rob ^t Manson K ^t —	{ S ^r W ^m Pritchard } K ^r { S ^r La. Smith } K ^r
1674	S ^r W ^m Hooker K ^t —	{ S ^r Hen. Tulse } K ^r { S ^r Rob ^t Giffery } K ^r
1675	S ^r Rob ^t Viner K ^t Bar ^t	{ S ^r Nath. Kerne } K ^r { S ^r Lo ⁿ Lethculler } K ^r
1676	S ^r Joseph Sheldon K ^t —	{ S ^r Tho. Gold } K ^r { S ^r Lo ⁿ Shorter } K ^r
1677	S ^r Tho. Davies K ^t —	{ S ^r Jo ⁿ Peake } K ^r { S ^r Tho. Stamp } K ^r

1676
 46
 1732

A Table shewing y^e Dominical letter Cy^c
 golden Number for 56 years from



Letter Cycle of y^r sun Epact and
 from the year 1676



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Short Rules to find the Golden Number, Dominical Letter, Epact, &c. in short Disticks.

To know if it be Leap-Year, or what Year past.

*Divide the Year by 4, what's left shall be
For Leap-Year 0. for past 1, 2, or 3.*

Example.

Anno 1680. divide only the latter part of this Number, which is 80, by 4, and there remains 0, which shews it to be Leap-Year.

To find the Dominical, or Sunday Letter.

*Divide the Year, its 4th, and 4 by 7,
What's left subtract from 7, the Letters given,
A. 1. B. 2. C. 3. D. 4. E. 5. F. 6. G. 7.*

Example.

The Year of our Lord	1680
Its fourth	420
To both which add	4
	<hr/>
	7) 2104 (3
	21
	<hr/>
	04

Being divided by 7, the remainder is 4; and according to the order of the standing of the Letters, it shews it to be D, which is the first of the Dominical Letters for that Year, (which is Leap-Year) which continues until the 24th of February, (St. Matthias day) and the other Letter is C, which serves all the Year after, accounting the Letters backward.

B

To

*To find the Golden Number, Cycle of the Sun,
and Indiction.*

*When 1, 9, 3, toth^r Year hath added been,
Divide by 19, 28, 15.*

Example.

To 1680 add 1, which is 1681 : divide that by 19, and there remains 9, which is the Golden Number for that Year. Again to 1680 add 9, and the sum is 1689 ; divide by 28, the residue is 9, the Cycle of the Sun for that Year. Lastly, To 1680 add 3, the sum is 1683 ; which being divided by 15, the remainder is 3, which is the Indiction for the same Year.

*The Prime and Golden Number being given, to
find the Epact.*

*Divide by 3, for each one left add 10,
39 reject ; the Prime makes Epact then.*

Example.

Anno 1680 the Golden Number is 9, which divide by 3, and there remains 0 ; therefore ten times 0 is 0, which added to 9, the Epact for the Year 1680.

*By the 19 Epacts, to find the day of Easter-Limit
from the beginning of March inclusively.*

*The Epacts take from 47 but two,
The greatest take from 77, 'twil do.*

Example.

Anno 1680 the Epact being 9, subtract it from 47,
there

there remains 38, which is *Easter Limit* for the same Year; which reckoned from the beginning of *March* inclusively, it will fall on *April* the 7th.

But when the Epact is 28, or 29, it must be subtracted from 77, that so the Limit may remain, and the next following Sunday after the Limit is always *Easter* day.

Easter-Limit, and the Dominical Letter being given; to find Easter-day.

*The Letter more by 4 from Limit take,
What's left from nearest sevens, shall Easter make.*

Or thus;

Take the Number of the given Letter more by 4 from the given Limit, and the residue from the greater sum of sevens, the last remainder added to the Limit (the Sum) or its excess above 31, is *Easter-day* in *March* or *April*.

Example.

Anno 1680, the letter C, which is 3, more by 4, is 7; which taken from the Limit 38, the residue is 31; this taken from the nearest greater sum of Sevens in the Limit, viz. 35, there remains 4; which added to the Limit 38, the sum is 42; the excess of which above 31 is 11; Therefore the 11th of *April*, Anno 1680, is *Easter-day*.

For the Days of the Months on which the Sun entereth the 12 Signs.

*Twice 9, twice 10, four 12s, 11,
Then 10, then 9, then 8 or 7.*

V. 8. II. 5. 9. III. 4. m. 7. Vp. 11. X.
Mar. Apr. Ma. Jun. Jul. Aug. Sept. Oct. Nov. Dec. Jan. Feb.
 9. 9. 10. 10. 12. 12. 12. 12. 11. 10. 9. 8.

For the Degree of the Sun's Place on any day.

From the day of the month on which the Sun's Place is required, if you may, or else from the sum of that and 30, subtract the day of his entrance into the Sign of that month, the remainder shall be the Degree of his place, in that or the next preceding Sign.

Example.

Suppose the 6th day of *March* 1680, I would know in what Degree of the Sign the Sun is in: Therefore according to the Rule, put 30 to it, then is it 36; from which if you take 9, the day of the Sun's entrance into the Sign of that month, there remains 27, which shews the Sun is in 27 degrees, in the Sign preceding; which is V.

To find the Age of the Moon, or the Day of Her Change.

Janu. 0, 1, 2, 3, 4, 5, 6,

8, 8, 10, 10, *these to the Epact fix.*

The sum (bate 30) to the Month day add,

Or take from 30, Age or Change is had.

Which is thus Explained.

Add to the Epact,

Jan. Feb. Mar. Apr. Ma. Jun. Jul. Aug. Sep. Oct. Nov. Dec.

0. 2. 1. 2. 3. 4. 5. 6. 8. 8. 10. 10.

When the Epact is added to any of these Numbers, the sum if it be less than 30, or the Excess above 30, added

added to the day of the given Month, (rejecting, if need be) gives the Age of the Moon that day; but subtracted from 30, leaves the day of the Change in (or from the beginning of) that month.

For the day of the Full Moon, add or subtract 15 to or from the day of the Change.

Example.

(1.) For the Age of the Moon on the 11th of May, 1680, the Number of the month is 3, added to the Epact 9, makes 12; which added to 10, makes 22, the Age of the Moon required.

(2.) For the day of the Change, (or New Moon) in May 1680, the Epact 9, with the Figure 3, makes 12; (as before); which subtracted from 30, there remains 18, on which day is the Moons Change, (or the New Moon) in May 1680.

(3.) For the day of the Full Moon, take 15 from 18, there remains 3, which the 15 day of the Full Moon in that Month.

To find the Hour of the Moons coming to South, and High-Water at London.

*The Moons Age multiply by 4; divide
By 5 for southing; add 3 for the Tyde.*

Example.

If on the 10th of May 1680, the Moon is 10 days old; which being multiplied by 4, makes 40, and divided by 5, the Quotient, is 8, which is the time of the Moons southing in the Morning, because the Moon is past the Full; to which if you add 3, makes 11, which shews the time of High-Water at London.

The

♄. ☿. ♀. ☾. ♀. ♀. ♀. ♀. ♀. ♀. ♀. ♀. ♀.
Mar. Apr. Ma. Jun. Jul. Aug. Sept. Oct. Nov. Dec. Jan. Feb.
 9. 9. 10. 10. 12. 12. 12. 12. 11. 10. 9. 8.

For the Degree of the Sun's Place on any day.

From the day of the month on which the Sun's Place is required, if you may, or else from the sum of that and 30, subtract the day of his entrance into the Sign of that month, the remainder shall be the Degree of his place, in that or the next preceding Sign.

Example.

Suppose the 6th day of *March* 1680, I would know in what Degree of the Sign the Sun is in: Therefore according to the Rule, put 30 to it, then is it 36; from which if you take 9, the day of the Sun's entrance into the Sign of that month, there remains 27, which shews the Sun is in 27 degrees, in the Sign preceding; which is ♄.

To find the Age of the Moon, or the Day of Her Change.

Janu. 0, 1, 2, 3, 4, 5, 6,

8, 8, 10, 10, *these to the Epact fix.*

The sum (bate 30) to the Month day add,

Or take from 30, Age or Change is had.

Which is thus Explained.

Add to the Epact,

Jan. Feb. Mar. Apr. Ma. Jun. Jul. Aug. Sep. Oct. Nov. Dec.
 0. 2. 1. 2. 3. 4. 5. 6. 8. 8. 10. 10.

When the Epact is added to any of these Numbers, the sum if it be less than 30, or the Excess above 30, added

added to the day of the given Month, (rejecting, if need be) gives the Age of the Moon that day; but subtracted from 30, leaves the day of the Change in (or from the beginning of) that month.

For the day of the Full Moon, add or subtract 15 to or from the day of the Change.

Example.

(1.) For the Age of the Moon on the 11th of May, 1680, the Number of the month is 3, added to the Epact 9, makes 12; which added to 10, makes 22, the Age of the Moon required.

(2.) For the day of the Change, (or New Moon) in May 1680, the Epact 9, with the Figure 3, makes 12; (as before); which subtracted from 30, there remains 18, on which day is the Moons Change, (or the New Moon) in May 1680.

(3.) For the day of the Full Moon, take 15 from 18, there remains 3, which is the day of the Full Moon in that Month.

To find the Hour of the Moons coming to South, and High-Water at London.

*The Moons Age multiply by 4; divide
By 5 for southing; add 3 for the Tyde.*

Example.

If on the 10th of May 1680, the Moon is 10 days old; which being multiplied by 4, makes 40, and divided by 5, the Quotient, is 8, which is the time of the Moons southing in the Morning, because the Moon is past the Full; to which if you add 3, makes 11, which shews the time of High-Water at London.

The

*The Use of the Almanack in Lines, Entituled,
(An Almanack shewing the Day of the
Month, Suns Place, Right Ascension and
Declination for ever.)*

THE Margin on the left side sheweth the Suns Declination for every day in the Year, directing your eye from any day of the month required.

As for Example.

If it should be required to know what Declination the Sun hath on the 25 day of *October*; which day you will find in the second Column, and right against the 15 day, the Declination to be about 15 degrees; and you may well determine it to be South Declination, because the Sun is then to the southward of the Equinoctial, being after the 13 day of *September*; from which time, to the 10th of *March* following, the Sun hath all that time South Declination. And if you would know the Suns Place for the same day, observe this direction following.

To find the Sun's Place.

Suppose the Suns Place were required on the aforesaid day, viz. the 25 of *October*: direct your eye from the said day, to the next Column on the right hand, and you will find the Suns Place to be in 12 degrees of *Scorpio*. And if you would know the Suns Right Ascension that day, in time observe these following Directions.

To find the Suns Right Ascension in Hours:

Suppose it were required to find the Suns Right Ascension (converted into Hours) for the aforesaid 23 of *October* ; which in the 4th Column you will find, right against the said day, to be 15 hours.

The same way and order is to observed in all the rest of the months for any of the forementioned Requisites.

The Use of the Perpetual Almanack. ✓

THis Almanack is contained in this short Distich ;

*At Dover Dwells George Brown Esquire,
Good Christopher Finch, And David Frier.*

By which Verse, with the help of the Dominical Letter, you may find the day of the month, for any time past, present, or to come ; the use of which Tables and Verse are here-under shewed.

*The Use of the Tables of the Dominical Letters,
and their Application, for finding the day
of the Month by the help of the aforesaid Distich.*

First therefore observe, That all those Years express'd in the Tables, are all Leap-Years ; as the Years 1000, 1200, 1400, 1600, &c. and so of the rest, which are all Leap-Years, and have each of them two Dominical Letters, as you may see in their respective Columns

lunns over their heads; as for the Year 1000, the Dominical Letters were G F, and so of the rest. The other Figures also, as 20, 24, 28, 32, &c. are all Leap-Years; the use of which are thus explained.

First, Suppose the Dominical Letter is required for the Year 1632; look for 1600 in one of the Columns, and in another Column for 32; and on the head of the said Column, you will find it is Leap-Year, and the *Dominical Letters* to be A G.

Secondly, Suppose you would know the *Dominical Letter* for the Year 1681: Look in the Table for 81, which you find not there; Therefore look for the Year before, which is 80, and that is *Leap-Year*, and the *Dominical Letters* are D C. Now C being the *Dominical Letter* for the latter part of the Year 1680. The next Letter before it, in the Alphabetical order is B, which is the *Dominical Letter* for the next Year 1681, Which Letter you will find on the top of the next Column, where you will find the letter B, with the figure of 1 by it, which informs you that it is the first after *Leap-Year*. And so for the Year 1682, the *Dominical Letter* is A, and the second after *Leap-Year*; the same is to be understood of the rest. Thus having found the *Dominical Letter*, the day of the Month may be found by these following Directions.

To find the Day of the Month by the fore-mentioned Distich, with the help of the Dominical Letters found in the Table.

For the finding the day of the Month by that short Verse, you are to take notice, That the first Letter in each word, is the same Week-day Letter that always beginneth the Month: as A always beginneth *January*,
and

and so of the rest, as you may see in any Almanack, according to that order as you see in the Distich: All which will be sufficiently explained in this

Example.

The first Sunday in *June*, in the Year 1681, I would know what day of the month it is for that Year; I find B is the *Dominical Letter*; and by the Distich you find the Letter E begins the month of *June*; therefore count on in the natural order of the Alphabet, from E until you come to B, which is Sunday, thus, E one, F two, G three, A four, B five, which is Sunday, and the 5th day of the Month.

Example 2.

I would know what day of the month the first *Thursday* of *July* is in the Year 1681, the *Dominical Letter* being B. I find by the Verse that *July* begins the month with G; therefore I say, G one, A two, B three, (which is *Sunday*) C therefore is *Monday*, D *Tuesday*, E *Wednesday*, F *Thursday*, which is seven in number from G, (including it) and therefore is the 7th day of the month on which the first *Thursday* falls on. The month begins with a *Friday*, and so you may cast your Eye down to a small Table on the bottom of the said Almanack, and there you may take notice, that the first row of figures on the head of the Table, is 1. 8. 15. 22. 29; which you may reckon to be always the same days of the week that the month begins with; as if the months which begin with a *Sunday*, then the first row are all *Sundays*, and the second row all *Mondays*, the third row all *Tuesdays*, and so on. As for instance, The month of *July*, in the Year 1681, begins on a *Friday*, so then the upper row are all *Fridays*, and the second row *Saturdays*, &c. So also you may say, *Friday* and *Friday* is 8, and *Friday* is 15, and *Friday* is 22, and *Friday* is 29, &c. So
C after

after these Rules and Directions, you may always find the day of the month at any time, both past, present, and to come.

Upon the same Print of the *Perpetual Almanack*, you have also some other small Tables ; one shewing the time of High-Water at *London-Bridg* any day of the Moons Age. Another sheweth the Moons coming to South at any day of her Age ; by help of which you may know the time of High-Water at *London* or else-where, where the time of Flowing is known, at the Full and Change days. The fourth Table sheweth the Moons Age for her shining. The Use of each Table shall be explained in these following Directions.

By having the Moons Age, to find the time of High-Water at London-Bridg.

The Moons Age must be first known from some other Tables in the Book, or else-where ; which being known, find the day thereof in the fore-mentioned small Table, and right against it, on the left hand, you will find the time of High-Water at *London-Bridg*.

As for Example.

If the Moon be six days old, I would know when it is High-Water at *London-Bridg*. Therefore first seek the Moons Age 6 in its proper Table, and right against it you will find 7. 48. which shews that it is High-Water at 7 a Clock and 48 minutes past.

To find the Moons Southing any day of her Age.

First you must look the Age of the Moon as before, and then seek the same in the Table of her Age, and right against it, in the Table on the right hand, under the

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Table

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Age.

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the

*This Table readily sheweth y^e exact day of y^e
her true Age: for Fiftene yea*

| | 1678 | 1679 | 1680 | 1681 | 1682 | 1683 | 1684 | 1685 |
|-------|----------|------------|------|---------|---------|---------|---------|------|
| | ● ○ | ● ○ | ● ○ | ● ○ | ● ○ | ● ○ | ● ○ | ● ○ |
| Janu | 12 27 | 2 16 21 | 5 | 9 23 28 | 13 17 | 3 | 6 22 24 | |
| Feb | 11 26 | 0 15 19 | 4 | 8 22 27 | 11 16 | 1 | 5 20 23 | |
| Mar | 12 28 23 | 17 20 | 5 | 9 24 28 | 13 18 | 2 | 6 21 24 | |
| Apr | 11 26 29 | 15 18 | 3 | 8 22 27 | 11 16 | 30 | 4 19 23 | |
| May | 10 26 29 | 15 18 | 3 | 7 22 26 | 11 16 | 30 | 4 18 23 | |
| June | 9 24 27 | 14 16 | 2 | 6 20 25 | 9 14 28 | 3 | 17 21 | |
| July | 8 23 27 | 13 15 131 | 5 | 19 24 | 9 14 28 | 2 | 16 21 | |
| Augu | 7 22 26 | 11 14 29 | 3 | 19 22 | 8 12 26 | 30 | 14 10 | |
| Sept | 5 20 24 | 10 12 27 | 2 | 17 21 | 6 10 25 | 28 | 13 18 | |
| Octo | 5 19 24 | 9 15 27 | 3 | 17 20 | 6 10 25 | 28 | 13 17 | |
| Nove | 4 18 23 | 7 11 25 29 | 15 | 19 | 5 | 8 24 26 | 12 16 | |
| Decem | 3 17 22 | 7 11 25 29 | 15 | 18 | 4 | 8 23 26 | 11 15 | |

day of ^rNew and full Moone as likewise
 the years to come. from y^e year 1678, to 1692

Fig 11

| 1684 | 1685 | 1686 | 1687 | 1688 | 1689 | 1690 | 1691 | 1692 |
|-----------|----------|----------|---------|----------|-----------|------|------|------|
| ● ○ | ● ○ | ● ○ | ● ○ | ● ○ | ● ○ | ● ○ | ● ○ | ● ○ |
| 6 2 2 24 | 10 13 29 | 3 18 22 | 7 11 25 | 30 14 19 | 4 8 23 | | | |
| 5 20 23 | 9 12 28 | 2 17 21 | 6 9 24 | 28 13 18 | 2 7 21 | | | |
| 6 21 24 | 10 14 29 | 3 18 21 | 7 11 26 | 30 14 19 | 4 7 22 | | | |
| 4 19 23 | 9 12 28 | 2 17 20 | 5 9 24 | 28 14 18 | 2 6 20 | | | |
| 4 18 23 | 8 12 27 | 30 17 10 | 5 9 24 | 28 13 17 | 23 1 6 20 | | | |
| 3 17 21 | 6 10 25 | 29 15 17 | 3 7 22 | 26 11 16 | 30 4 18 | | | |
| 2 16 21 | 6 10 24 | 29 14 17 | 3 6 22 | 25 11 15 | 30 4 18 | | | |
| 0 14 10 | 4 9 23 | 27 13 15 | 31 5 20 | 24 9 13 | 28 31 16 | | | |
| 8 13 18 | 2 7 21 | 26 11 14 | 29 3 19 | 22 8 12 | 27 30 5 | | | |
| 13 17 | 2 7 21 | 25 10 14 | 28 3 18 | 22 8 11 | 26 29 15 | | | |
| 12 16 130 | 5 19 24 | 9 12 27 | 1 16 20 | 6 9 25 | 27 13 | | | |
| 11 15 30 | 5 19 24 | 8 12 26 | 13 1 16 | 20 6 9 | 25 27 13 | | | |



the title of *Moons Southing*, you will have your desire. And here note, That from the New to the Full, the Moon cometh to South in the Afternoon ; but from the Full to the New in the Morning.

As for Example.

When the Moon is six days old, I would know the time of her coming to South. Therefore if you cast your eye on the Table of the *Moons Southing*, you will find 4. 48. which shews that the Moon cometh to South at 4 a Clock and 48 minutes past.

The Use of these Tables for finding the time of the Moons Shining.

To know how long the Moon shineth, enter the Col. of the Moons Age for her shining, and against it on the left hand you have the time of her shining: which all the time of her Encrease being added to the hour of Suns Rising, gives the time of her Rising ; but if added to the time of Suns Setting, gives the time of her Setting ; but after the Full, the time of her shining from the Suns Rising, and it gives her Rising ; and then take the same from the Suns Setting, and it gives the time of her Setting.

Example.

In the Year 1680 *October* the 5th, the Moon is 22 days old. Which number find in the Table, and you will see that right against it there is 6 hours 24 minutes for the time of her shining ; which being added to the Suns rising of the same day, which is 6 hours 46 minutes, makes 13 hours 32 minutes ; from which take 12, and there rests 1 hour 32 minutes, which is the time of the Moons Rising the next morning.

Again, to the same 6 hours 24 minutes, add 5 hours 14 min. (the Suns Setting) and it gives 11 hours 38 min.

min, for the time of her setting the next day a little before noon.

To find the Hour of the Night by the shadow of the Moon upon a Sun-Dial, by the help of the Table of the Moons Southing.

Observe on a Sun-Dial what hour the shadow of the Moon falls upon, and take notice how much the shadow doth either lack or is past the hour of 12 upon the Dial, for so much it doth want of, or is past the time of the Moons coming to South.

Example.

Suppose the Moon were ten days old; you find (by the Table) that the Moon cometh to South at 9 of the Clock. Now suppose the shadow of the Moon should fall on the hour of 10, this wants 2 hours of 12, and therefore it wants two hours of eight, which is 6 of the Clock in the Evening.

But if the shadow of the Moon had been at 2 upon the Dial, then you must have added 2 hours to the Moons coming to South, then would it be 10 of the Clock at Night.

And Note; When the Moon is in the Full, then the shadow of the Moon shews the true hour of the Night, as the shadow of the Sun doth by Day.

The Use of the Table of the Eclipses of the Sun and Moon.

This Table is sufficiently plain of it self by inspection only; but however I shall give one Example.

In the Year 1681, the 28 of *August*, you will find the

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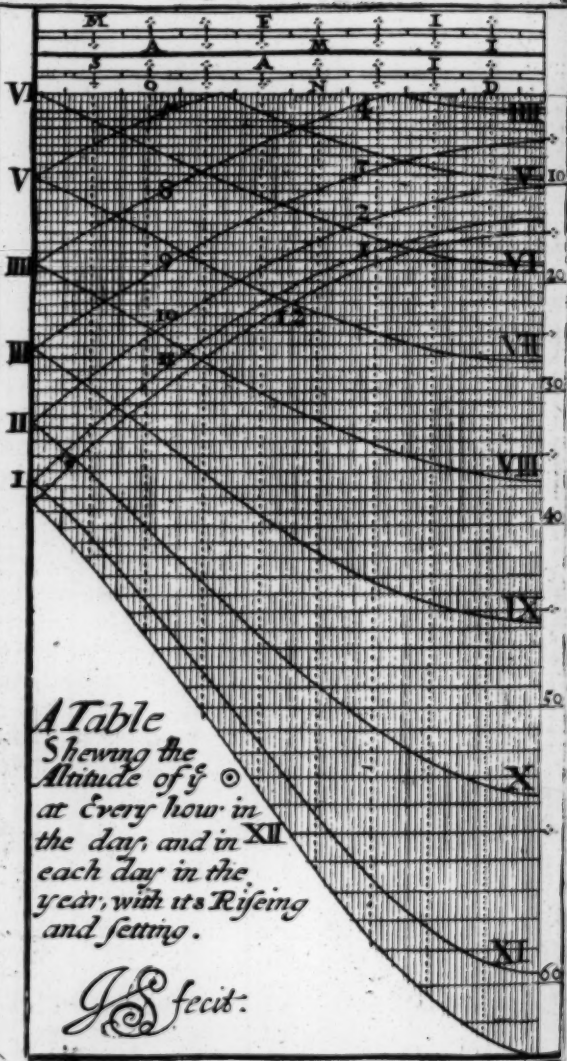
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A Catalogue of all the Eclipses of ^e Sun
and Moon, which will be visible in Eng:
from the year 1677, to the year 1700.

| Year. | Moneth. | D. | H. | M. | Lun. | Dig. | Min. |
|-------|------------|----|----|----|------|------|------|
| 1677 | May. | 6 | 13 | 25 | ☾ | 8 | —15 |
| 1678 | October. | 19 | 8 | 17 | ☾ | 22 | —18 |
| 1681 | August. | 18 | 13 | 22 | ☾ | 10 | —35 |
| 1682 | August. | 7 | 17 | 56 | ☾ | 18 | —50 |
| 1682 | February. | 11 | 11 | 28 | ☾ | 19 | —48 |
| 1683 | January. | 17 | 4 | 27 | ☉ | 10 | —30 |
| 1684 | June. | 16 | 14 | 17 | ☾ | 1 | —35 |
| 1684 | July. | 2 | 3 | 10 | ☉ | 8 | —6 |
| 1685 | November. | 30 | 10 | 26 | ☾ | 21 | —45 |
| 1686 | November. | 19 | 11 | 22 | ☾ | 7 | —35 |
| 1687 | May. | 11 | 1 | 25 | ☉ | 1 | —40 |
| 1688 | April. | 5 | 6 | 4 | ☾ | 6 | —49 |
| 1689 | March. | 25 | 6 | 41 | ☾ | 21 | —19 |
| 1699 | September. | 18 | 14 | 46 | ☾ | 20 | —39 |
| 1690 | March. | 14 | 10 | 14 | ☾ | 5 | —53 |
| 1692 | July. | 17 | 15 | 9 | ☾ | 12 | —28 |
| 1693 | February. | 11 | 16 | 24 | ☾ | 19 | —32 |
| 1693 | June. | 23 | 9 | 6 | ☉ | 2 | —34 |
| 1694 | June. | 26 | 12 | 50 | ☾ | 6 | —47 |
| 1695 | November. | 10 | 7 | 0 | ☾ | 6 | —55 |
| 1696 | May. | 6 | 11 | 45 | ☾ | 21 | —48 |
| 1696 | October. | 29 | 16 | 30 | ☾ | 21 | —45 |
| 1697 | October. | 19 | 7 | 44 | ☾ | 8 | —54 |
| 1699 | March. | 5 | 7 | 14 | ☾ | 9 | —5 |
| 1699 | September. | 12 | 21 | 30 | ☉ | 10 | —0 |



the Moon will be Eclipsed at 14 hours 22 min. which is 22 min. past 2 of the Clock next Morning, and the quantity eclipsed will be 10 digits 35 minutes.

The Use of the Table Entituled, A necessary Table for Mensuration of Superficial Measures.

In this Table are contain'd Measures of two different kinds, viz. Long, and Square Measure; that Table on the right hand is Long Measure, and that on the left is Square Measure. The Table of Long Measure doth inform you how many Inches, Feet, Yards, Paces, Pearches, &c. are contain'd in a common *English* or *Italian* Mile.

The Use of the Table of Long Measure.

In the first row of the Table you may see that in a Centesm (which is 1 link or the 100 part of a Pole Chain) contains 7 Inches 92 Parts; and in 1 Foot, 12 Inches; in 1 Yard, 36 Inches; in a Pace, 60 Inches; in a Pearch, Pole, or Rod, 198 Inches; in a Chain, (which contains four Poles) 792 Inches; in a Mile, 63360 Inches; and so of the rest.

The Use of the Table of Square Measure.

This Table will inform you how many square Inches, or Feet, Yards, Paces, Pearches, Chains, and Acres, are in a square Mile, thus; In a square Foot are contained 144 square Inches; in a square Yard are contained 9 square Feet; in a square mile are contained 640 square Acres of Land.

The Use of the Table of Corn Measure.

Corn is commonly measured by the Bushel, Peck, or Gallon, &c. and most of these Measures are constituted from the Gallon, which contains 8 pints, in which are contained $27 \frac{1}{4}$ Cubical Inches ; or if you make a square Vessel, whose side and bottom shall contain 6 Inches, and 48 hundred parts of an Inch, it will contain the just Gallon dry measure.

For the use of the Table, it is thus ; 8 Pints make 1 Gallon, 16 Pints in a Peck, 64 in a Bushel ; 2 Bushels 1 Strike, &c. The two lowermost rows of figures shew the weight of Corn, according to each measure in Troy and *Averdupois* weight ; the uppermost mark with the Letter T is the Troy, and A the *Averdupois* ; where you may see that a Bushel of Corn weighs 64 pound Troy, and 56 *Averdupois*.

The Use of the Table of Wine Measure.

The Gallon of Wine Measure is 231 Cubical Inches. Therefore to make a true Wine Gallon, make a square Vessel that hath the sides and bottom to be 6 Inches, and 15 hundred parts of an Inch, this will be a true Gallon of Wine Measure.

The use of the Table is thus ; in a Gallon is contain'd 8 Pints, in a Hoghead 504 Pints, &c.

The Use of the Tables of Beer and Ale.

In the Table you will find 288 Pints is contain'd in a Barrel of Beer, and 36 Gallons in a Barrel, &c.

In a Barrel of a Ale are contain'd 256 Pints, &c. The Gallon for Ale, or Beer, contains 282 Cubical Inches ;

Inches ; and a square Vessel, whose sides and bottom are 6 Inches $\frac{5}{8}$ hundred parts of an Inch, which Vessel will hold a just Beer and Ale Gallon.

The Use of the Tables of Averdupoies, Troy, and Apothecaries Weight.

There are two sorts of Weights used in *England* ; the one is called *Troy*, the other *Averdupois*, (or overweight). *Troy* Weight is thus ordered by the Statute, as is exprest in the Table of *Troy Weight*, that 24 Grains of Wheat makes a penny Weight, and 20 penny Weight makes an Ounce, &c. By this Weight Gold and Silver is constantly weighed ; and the Assize of Bread is set down in the Statutes according to this Weight.

And also the Apothecaries either do, or should use this Weight ; only they divide the Ounce into other parts and denominations, according to the Tables of that Weight inserted in this Book, as 20 Grains make a Scruple, &c.

The Use of the Tables of the Assize of Bread for all Weights.

First you must consider the price of Wheat in the Market, which must neither be of the best nor worst, but of the midling sort and price. Then you must consider whether the Baker be a Freeman of a City or Corporation, or not : for Freemen are allowed three-pence in the Bushel more for profit than others that are not Free. These allowances are abated for in the Tables ; therefore you may find the price of Wheat on the

one

one side of the Table for free Bakers, and on the other side for Forreigners, and in the midst you have the several Weights of the Peny White, Wheaten, and Household Loaves ; and by the Statutes of K. Hen. 3. and Eliz. 31. If a Baker wants but one ounce in 36 of this Assize ; for the first, second, and third Fault, he may be amerced ; but for the fourth Fault, he is to be set in the Pillory without redemption.

The Use of the Perpetual Table for finding the Break of Day, Suns Rising, Planetary Hours, both by Night and Day in the Latitude of London, every 10th day in the month.

In the first Column you have the 12 months of the Year ; in the second, the 1, 11, and 22 days of the month ; in the third the Break of Day, which on the 11th of February is at 5 of the Clock ; in the fourth is the time of Twilight, which against the said 11th of February, is at 7 of the Clock, which is the time of the ending of Twilight in the Evening ; in the 5th and 6th Column, the Rising and Setting of the Sun ; in the 7th and 8th Column, the length of the Day and Night ; and in the 9th and 10th Columns, the length of the Planetary Hours both by Night and Day.

The Use of the Table for finding the Moveable Feasts by the help of the Golden Number and Dominical Letter.

The first Column sheweth the *Dominical Letters* ; the second sheweth the *Prime* or *Golden Numbers* ; the rest of the Columns shew the *Moveable Feasts*, which
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A Catalogue containing all y

| Shires | Citt | Bish | Mar | Cath | Pchi | Riv | Brid | Chr | For | Par |
|-----------------|------|------|-----|------|------|-----|------|-----|-----|-----|
| Kent | 2 | 2 | 17 | 8 | 398 | 6 | 14 | 0 | 0 | 27 |
| Suffex | 1 | 1 | 18 | 1 | 312 | 2 | 10 | 0 | 4 | 37 |
| Surrey | 0 | 0 | 6 | 0 | 140 | 1 | 7 | 0 | 0 | 17 |
| Middlesex | 2 | 1 | 3 | 0 | 73 | 1 | 5 | 1 | 0 | 4 |
| Hants shire | 1 | 1 | 18 | 5 | 253 | 4 | 1 | 0 | 4 | 20 |
| Dorset shire | 1 | 0 | 18 | 5 | 248 | 4 | 1 | 1 | 0 | 11 |
| Wilt shire | 1 | 1 | 21 | 1 | 564 | 5 | 29 | 1 | 9 | 20 |
| Somerset shire | 3 | 2 | 29 | 1 | 585 | 9 | 45 | 0 | 2 | 28 |
| Devon shire | 1 | 1 | 40 | 3 | 594 | 23 | 106 | 0 | 0 | 25 |
| Cornwall | 0 | 0 | 23 | 0 | 161 | 7 | 31 | 0 | 0 | 9 |
| Essex | 1 | 0 | 21 | 1 | 415 | 7 | 28 | 0 | 1 | 46 |
| Hartford | 1 | 0 | 18 | 0 | 120 | 1 | 24 | 0 | 0 | 35 |
| Oxford shire | 1 | 1 | 10 | 0 | 180 | 3 | 26 | 0 | 4 | 9 |
| Buckingham sh | 0 | 0 | 11 | 0 | 185 | 2 | 14 | 0 | 0 | 15 |
| Bark shire | 0 | 0 | 11 | 1 | 146 | 3 | 7 | 0 | 4 | 13 |
| Glocester shire | 1 | 1 | 20 | 1 | 580 | 2 | 22 | 1 | 0 | 20 |
| Suffolk | 1 | 0 | 18 | 1 | 575 | 2 | 32 | 0 | 0 | 27 |
| Norfolk | 1 | 1 | 11 | 2 | 660 | 5 | 24 | 0 | 3 | 25 |
| Rutland | 0 | 0 | 2 | 0 | 47 | 0 | 1 | 0 | 0 | 1 |
| Northampton | 1 | 1 | 11 | 2 | 520 | 5 | 24 | 0 | 3 | 25 |
| Wunnington shir | 0 | 0 | 5 | 0 | 78 | 1 | 5 | 0 | 0 | 7 |
| Bedford shire | 0 | 0 | 10 | 0 | 116 | 1 | 6 | 0 | 0 | 15 |
| Cambridgef | 0 | 1 | 6 | 0 | 163 | 1 | 7 | 0 | 0 | 5 |
| Leicester shire | 1 | 1 | 12 | 1 | 158 | 7 | 21 | 1 | 0 | 16 |
| Warwick shire | 1 | 0 | 11 | 2 | 200 | 10 | 10 | 0 | 2 | 17 |
| Stafford shire | 1 | 0 | 12 | 5 | 130 | 13 | 19 | 1 | 1 | 20 |
| Worcester shir | 1 | 1 | 7 | 13 | 132 | 5 | 15 | 1 | 2 | 16 |
| Shrop shire | 1 | 0 | 12 | 13 | 170 | 18 | 11 | 0 | 7 | 27 |
| Hereford shire | 1 | 1 | 8 | 7 | 176 | 15 | 11 | 1 | 2 | 18 |
| Lincolne shire | 1 | 1 | 20 | 2 | 630 | 9 | 15 | 0 | 0 | 13 |
| Nottingham shi | 0 | 0 | 11 | 0 | 108 | 5 | 17 | 0 | 0 | 15 |
| Darby shire | 0 | 0 | 6 | 4 | 106 | 17 | 21 | 0 | 1 | 24 |
| Chester | 1 | 1 | 9 | 7 | 68 | 8 | 10 | 0 | 0 | 10 |
| York shire | 1 | 1 | 46 | 14 | 563 | 33 | 62 | 4 | 0 | 72 |
| Lancas shire | 1 | 0 | 5 | 4 | 63 | 11 | 24 | 0 | 1 | 28 |
| Durham | 1 | 1 | 5 | 4 | 62 | 11 | 26 | 0 | 0 | 21 |
| Westmorland | 1 | 0 | 4 | 6 | 26 | 8 | 15 | 0 | 2 | 10 |
| Cumberland | 1 | 1 | 8 | 12 | 108 | 20 | 33 | 0 | 3 | 18 |
| Northumberland | 1 | 0 | 11 | 12 | 108 | 21 | 33 | 0 | 1 | 20 |
| Monmouth | 0 | 0 | 6 | 7 | 127 | 19 | 14 | 0 | 0 | 20 |
| Glamorgan | 0 | 1 | 7 | 5 | 151 | 16 | 5 | 0 | 3 | 25 |
| Rathor | 0 | 0 | 4 | 5 | 152 | 13 | 5 | 0 | 0 | 20 |
| Brecknok | 0 | 0 | 4 | 5 | 60 | 27 | 17 | 0 | 0 | 20 |
| Cardgan | 0 | 0 | 4 | 6 | 64 | 20 | 9 | 0 | 0 | 20 |
| Cardmarthin | 0 | 0 | 4 | 4 | 87 | 20 | 7 | 0 | 0 | 20 |
| Ponbrok | 0 | 1 | 6 | 4 | 145 | 6 | 7 | 0 | 1 | 20 |
| Montgomery | 0 | 0 | 0 | 5 | 47 | 26 | 0 | 0 | 0 | 20 |
| Merthoth | 0 | 0 | 0 | 4 | 37 | 26 | 7 | 0 | 0 | 20 |
| Denbigh | 0 | 0 | 0 | 4 | 57 | 24 | 7 | 0 | 0 | 20 |
| Flint shire | 0 | 0 | 0 | 4 | 28 | 4 | 2 | 0 | 0 | 20 |
| Anglesey | 0 | 0 | 0 | 0 | 83 | 4 | 0 | 0 | 0 | 20 |
| Cardigan | 0 | 0 | 0 | 0 | 73 | 0 | 0 | 0 | 0 | 20 |

A Necessary Table for Mensuration of Superficial Measures,

Long measure

| | Inches. | Centesime. | Feet. | Yard. | Pace. | Pearch. | Chain | Acre. | Mile. |
|-----------|------------|------------|---------|---------|---------|---------|-------|-------|-------|
| Inche. | 1 | 7.92 | 12 | 36 | 60 | 198 | 792 | 7920 | 63360 |
| Centesim. | 62.726 | 1 | 1.515 | 4.56 | 7.575 | 25 | 100 | 1000 | 8000 |
| Feet. | 144 | 2.295 | 1 | 3 | 5 | 16.5 | 66 | 660 | 5280 |
| Yard. | 1296 | 20.555 | 9 | 1 | 1.66 | 550 | 22 | 220 | 1760 |
| Pace. | 3600 | 57.381 | 25 | 2.448 | 1 | 3.5 | 13.2 | 132 | 1056 |
| Pearch. | 59204 | 625 | 272.25 | 30.25 | 10.89 | 1 | 4 | 40 | 320 |
| Chain. | 627264 | 10000 | 4356 | 484 | 174.24 | 16 | 1 | 10 | 80 |
| Acre. | 6272640 | 100000 | 43560 | 4840 | 1742.4 | 160 | 10 | 1 | 8 |
| Mile. | 4014489600 | 64000000 | 2878400 | 5097600 | 1115156 | 102400 | 6400 | 640 | 1 |
| Square | Inches. | Centesime. | Feet. | Yard. | Pace. | Pearch. | Chain | Acre. | Mile. |

square measure

| Troy Weight. | | | | Apoth: Weight. | | | |
|--------------|---------|-------|------|----------------|------|-------|-------|
| Grains. | | | | Gr | Scr: | | |
| 24 | Pen: wt | | | 20 | D | | |
| 480 | 20 | Ounc: | | 60 | 3 | 3 dr: | |
| 5760 | 240 | 12 | lib: | 480 | 24 | 8 | 3 oz |
| | | | | 5760 | 288 | 96 | 12 lb |

Troy l. to Averd: l. 17. 12.
Troy ounce to Av: 51. 56.
 Scruples. *Averd: Weight.*

| | | | | |
|--------|--------|---------|----------------|---------|
| 3 | Drams. | | Averd: Weight. | |
| 24 | 8 | Ounces, | | |
| 384 | 128 | 16 | pound. | |
| 43008 | 14336 | 1792 | 112 | Hund. |
| 860160 | 286720 | 35840 | 2240 | 20 Tun. |

Pints. A Table for Ale

| | | | | |
|-----|-------|-------|-------|-------|
| 8 | Gall: | | | |
| 64 | 8 | Firk: | | |
| 128 | 16 | 2 | Kild: | |
| 256 | 32 | 4 | 2 | Barr |
| 512 | 64 | 8 | 4 | 2 Hog |

Pints. Beer.

| | | | | |
|-----|-------|-------|-------|-------|
| 8 | Gall: | | | |
| 64 | 9 | Firk: | | |
| 144 | 18 | 2 | Kild: | |
| 288 | 36 | 4 | 2 | Barr: |
| 576 | 72 | 8 | 4 | 2 Hog |

| A Table
for Corn measure | | | | | | | | |
|-----------------------------|-----|-----|------|--------------|-----------------------------|------------------------------|------|------|
| Pints | Gal | Pec | Busk | or
strick | Car
noock
or
coomb | Seam
refer
or
quart | Way | |
| 8 | | | | | | | | |
| 16 | 2 | | | | | | | |
| 64 | 8 | 4 | | | | | | |
| 128 | 16 | 8 | 2 | | | | | |
| 256 | 32 | 16 | 4 | 2 | | | | |
| 512 | 64 | 32 | 8 | 4 | 2 | | | |
| 3072 | 384 | 102 | 48 | 24 | 12 | 6 | | |
| 5120 | 640 | 320 | 80 | 40 | 20 | 10 | 12 | Last |
| 1 | 81 | 16 | 64 | 128 | 256 | 512 | 3072 | 5120 |
| A | 140 | 71 | 14 | 56 | 1 C | 2 C | 4 C | 24 C |

The Line I Expresseth Troy weight, and A Averd.

| A Table for Wine measure. A Tim of
Wine weighing Averd. 17 C
weigh One But 11. $0\frac{1}{2}$
Ounces Troy. | | | | | | | | |
|---|-----------------|----------------|----------------|----------------|----------------|----------------|-----|-----|
| Pints | Gal | Rundl | Barr | Terce | Kepp | Pothia | But | Tim |
| 8 | | | | | | | | |
| 144 | 18 | | | | | | | |
| 252 | $31\frac{1}{2}$ | $1\frac{3}{4}$ | | | | | | |
| 776 | 42 | $2\frac{2}{3}$ | $1\frac{1}{2}$ | | | | | |
| 504 | 63 | $3\frac{1}{2}$ | 3 | $1\frac{1}{2}$ | | | | |
| 672 | 84 | $4\frac{2}{3}$ | $2\frac{2}{3}$ | 3 | $1\frac{1}{2}$ | | | |
| 1008 | 120 | 7 | 4 | 3 | 2 | $1\frac{1}{2}$ | | |
| 2010 | 252 | 14 | 8 | 6 | 4 | 3 | 2 | Tim |

The same for Honey, Oyl, &c

The Affize for Bread, for all WEIGHTS.

Weight of a penny Loaf.

Troy. Averd:

White Whea: hou: White: Whs: hou:

| Free town
Bakers. | White Whea: hou: | Troy. | Averd: | White: Whs: hou: | Foreigners |
|------------------------------|------------------------------|--------------------------|------------------------------|--------------------------|------------------------------|
| 2. 0. 10. 13. 25. 4. 33. 11. | 2. 0. 10. 13. 25. 4. 33. 11. | 15. 7. 23. 1. 30. 15. | 2. 0. 10. 13. 25. 4. 33. 11. | 15. 7. 23. 1. 30. 15. | 2. 0. 10. 13. 25. 4. 33. 11. |
| 2. 0. 15. 7. 25. 3. 30. 14. | 2. 0. 15. 7. 25. 3. 30. 14. | 14. 2. 22. 3. 28. 4. | 2. 0. 15. 7. 25. 3. 30. 14. | 14. 2. 22. 3. 28. 4. | 2. 0. 15. 7. 25. 3. 30. 14. |
| 2. 0. 14. 4. 21. 6. 28. 8. | 2. 0. 14. 4. 21. 6. 28. 8. | 13. 0. 19. 10. 26. 6. | 2. 0. 14. 4. 21. 6. 28. 8. | 13. 0. 19. 10. 26. 6. | 2. 0. 14. 4. 21. 6. 28. 8. |
| 2. 0. 13. 3. 19. 17. 26. 7. | 2. 0. 13. 3. 19. 17. 26. 7. | 12. 1. 18. 2. 24. 3. | 2. 0. 13. 3. 19. 17. 26. 7. | 12. 1. 18. 2. 24. 3. | 2. 0. 13. 3. 19. 17. 26. 7. |
| 3. 0. 12. 5. 18. 8. 24. 11. | 3. 0. 12. 5. 18. 8. 24. 11. | 11. 5. 16. 16. 22. 11. | 3. 0. 12. 5. 18. 8. 24. 11. | 11. 5. 16. 16. 22. 11. | 3. 0. 12. 5. 18. 8. 24. 11. |
| 3. 3. 11. 9. 17. 6. 23. 3. | 3. 3. 11. 9. 17. 6. 23. 3. | 10. 11. 15. 17. 21. 3. | 3. 3. 11. 9. 17. 6. 23. 3. | 10. 11. 15. 17. 21. 3. | 3. 3. 11. 9. 17. 6. 23. 3. |
| 3. 6. 10. 14. 16. 5. 21. 13. | 3. 6. 10. 14. 16. 5. 21. 13. | 9. 19. 14. 18. 19. 18. | 3. 6. 10. 14. 16. 5. 21. 13. | 9. 19. 14. 18. 19. 18. | 3. 6. 10. 14. 16. 5. 21. 13. |
| 3. 9. 10. 5. 15. 7. 20. 0. | 3. 9. 10. 5. 15. 7. 20. 0. | 9. 0. 8. 14. 2. 18. 16. | 3. 9. 10. 5. 15. 7. 20. 0. | 9. 0. 8. 14. 2. 18. 16. | 3. 9. 10. 5. 15. 7. 20. 0. |
| 4. 0. 9. 12. 14. 10. 19. 8. | 4. 0. 9. 12. 14. 10. 19. 8. | 8. 18. 13. 7. 17. 16. | 4. 0. 9. 12. 14. 10. 19. 8. | 8. 18. 13. 7. 17. 16. | 4. 0. 9. 12. 14. 10. 19. 8. |
| 4. 3. 9. 4. 12. 14. 18. 8. | 4. 3. 9. 4. 12. 14. 18. 8. | 8. 0. 9. 12. 13. 16. 18. | 4. 3. 9. 4. 12. 14. 18. 8. | 8. 0. 9. 12. 13. 16. 18. | 4. 3. 9. 4. 12. 14. 18. 8. |
| 4. 6. 8. 13. 13. 4. 17. 10. | 4. 6. 8. 13. 13. 4. 17. 10. | 8. 1. 12. 1. 16. 2. | 4. 6. 8. 13. 13. 4. 17. 10. | 8. 1. 12. 1. 16. 2. | 4. 6. 8. 13. 13. 4. 17. 10. |
| 4. 9. 8. 7. 12. 10. 16. 14. | 4. 9. 8. 7. 12. 10. 16. 14. | 7. 13. 11. 10. 15. 7. | 4. 9. 8. 7. 12. 10. 16. 14. | 7. 13. 11. 10. 15. 7. | 4. 9. 8. 7. 12. 10. 16. 14. |
| 5. 0. 8. 1. 12. 1. 16. 2. | 5. 0. 8. 1. 12. 1. 16. 2. | 7. 7. 11. 0. 13. 14. | 5. 0. 8. 1. 12. 1. 16. 2. | 7. 7. 11. 0. 13. 14. | 5. 0. 8. 1. 12. 1. 16. 2. |
| 5. 3. 7. 11. 11. 9. 15. 7. | 5. 3. 7. 11. 11. 9. 15. 7. | 7. 1. 10. 11. 14. 2. | 5. 3. 7. 11. 11. 9. 15. 7. | 7. 1. 10. 11. 14. 2. | 5. 3. 7. 11. 11. 9. 15. 7. |
| 5. 6. 7. 6. 11. 2. 14. 13. | 5. 6. 7. 6. 11. 2. 14. 13. | 6. 15. 10. 3. 13. 10. | 5. 6. 7. 6. 11. 2. 14. 13. | 6. 15. 10. 3. 13. 10. | 5. 6. 7. 6. 11. 2. 14. 13. |
| 5. 9. 7. 2. 10. 11. 14. 4. | 5. 9. 7. 2. 10. 11. 14. 4. | 6. 10. 9. 15. 13. 0. | 5. 9. 7. 2. 10. 11. 14. 4. | 6. 10. 9. 15. 13. 0. | 5. 9. 7. 2. 10. 11. 14. 4. |
| 6. 0. 6. 14. 10. 4. 13. 11. | 6. 0. 6. 14. 10. 4. 13. 11. | 6. 5. 9. 8. 12. 10. | 6. 0. 6. 14. 10. 4. 13. 11. | 6. 5. 9. 8. 12. 10. | 6. 0. 6. 14. 10. 4. 13. 11. |
| 6. 3. 6. 10. 9. 15. 13. 4. | 6. 3. 6. 10. 9. 15. 13. 4. | 6. 0. 9. 1. 12. 1. | 6. 3. 6. 10. 9. 15. 13. 4. | 6. 0. 9. 1. 12. 1. | 6. 3. 6. 10. 9. 15. 13. 4. |
| 6. 6. 6. 6. 9. 9. 12. 12. | 6. 6. 6. 6. 9. 9. 12. 12. | 5. 16. 8. 15. 11. 13. | 6. 6. 6. 6. 9. 9. 12. 12. | 5. 16. 8. 15. 11. 13. | 6. 6. 6. 6. 9. 9. 12. 12. |
| 6. 9. 6. 3. 9. 4. 12. 6. | 6. 9. 6. 3. 9. 4. 12. 6. | 5. 12. 8. 9. 11. 5. | 6. 9. 6. 3. 9. 4. 12. 6. | 5. 12. 8. 9. 11. 5. | 6. 9. 6. 3. 9. 4. 12. 6. |
| 7. 0. 5. 15. 8. 15. 11. 15. | 7. 0. 5. 15. 8. 15. 11. 15. | 5. 9. 8. 2. 10. 18. | 7. 0. 5. 15. 8. 15. 11. 15. | 5. 9. 8. 2. 10. 18. | 7. 0. 5. 15. 8. 15. 11. 15. |
| 7. 3. 5. 12. 8. 11. 11. 9. | 7. 3. 5. 12. 8. 11. 11. 9. | 5. 5. 7. 18. 10. 11. | 7. 3. 5. 12. 8. 11. 11. 9. | 5. 5. 7. 18. 10. 11. | 7. 3. 5. 12. 8. 11. 11. 9. |
| 7. 6. 5. 9. 8. 6. 11. 3. | 7. 6. 5. 9. 8. 6. 11. 3. | 5. 2. 7. 13. 10. 5. | 7. 6. 5. 9. 8. 6. 11. 3. | 5. 2. 7. 13. 10. 5. | 7. 6. 5. 9. 8. 6. 11. 3. |
| 7. 9. 5. 7. 8. 3. 10. 14. | 7. 9. 5. 7. 8. 3. 10. 14. | 4. 19. 7. 9. 9. 10. | 7. 9. 5. 7. 8. 3. 10. 14. | 4. 19. 7. 9. 9. 10. | 7. 9. 5. 7. 8. 3. 10. 14. |
| 8. 0. 5. 4. 7. 15. 10. 9. | 8. 0. 5. 4. 7. 15. 10. 9. | 4. 16. 7. 5. 9. 12. | 8. 0. 5. 4. 7. 15. 10. 9. | 4. 16. 7. 5. 9. 12. | 8. 0. 5. 4. 7. 15. 10. 9. |
| 8. 3. 5. 12. 7. 2. 10. 5. | 8. 3. 5. 12. 7. 2. 10. 5. | 4. 14. 7. 1. 9. 8. | 8. 3. 5. 12. 7. 2. 10. 5. | 4. 14. 7. 1. 9. 8. | 8. 3. 5. 12. 7. 2. 10. 5. |
| 8. 6. 5. 0. 7. 8. 10. 0. | 8. 6. 5. 0. 7. 8. 10. 0. | 4. 11. 6. 17. 9. 2. | 8. 6. 5. 0. 7. 8. 10. 0. | 4. 11. 6. 17. 9. 2. | 8. 6. 5. 0. 7. 8. 10. 0. |
| 8. 9. 4. 14. 7. 5. 9. 12. | 8. 9. 4. 14. 7. 5. 9. 12. | 4. 9. 6. 13. 8. 18. | 8. 9. 4. 14. 7. 5. 9. 12. | 4. 9. 6. 13. 8. 18. | 8. 9. 4. 14. 7. 5. 9. 12. |
| 9. 0. 4. 12. 7. 2. 9. 8. | 9. 0. 4. 12. 7. 2. 9. 8. | 4. 6. 6. 10. 6. 12. | 9. 0. 4. 12. 7. 2. 9. 8. | 4. 6. 6. 10. 6. 12. | 9. 0. 4. 12. 7. 2. 9. 8. |

*A Table of y^e number of bricks in a
rodd of Walling at any Feet high
From 1 to 20 for 1 and a $\frac{1}{2}$*

| <i>feet
high</i> | <i>at 1 brick
thick</i> | <i>at 1 brick
thick</i> | <i>The Use of y^e Table</i> |
|----------------------|-----------------------------|-----------------------------|---|
| 1 | 176 | 264 | If you would have this
Table for $\frac{1}{2}$ a brick, take
the half of y ^e table for
one brick if for 2 brick
then double it. if for 2
and a $\frac{1}{2}$ then ad both
these together; if
for three double
that for one
brick and $\frac{1}{2}$ |
| 2 | 352 | 528 | |
| 3 | 528 | 792 | |
| 4 | 704 | 1056 | |
| 5 | 880 | 1320 | |
| 6 | 1136 | 1704 | |
| 7 | 1232 | 1848 | |
| 8 | 1408 | 2112 | |
| 9 | 1584 | 2376 | |
| 10 | 1760 | 2640 | If you have any numbe
of feet of brick work, at
half a brick, 1 brick, or
2 bricks, or more, and you
would reduce it to one
brick and a half, then say
by the line of numbers as
1. 2. 4. 5 or 6 is to three.
so is the number of feet.
at $\frac{1}{2}$ 1. 2. $2\frac{1}{2}$ or 3 bricks to y ^e
number of feet at 1 and $\frac{1}{2}$. |
| 11 | 1936 | 2904 | |
| 12 | 2112 | 3168 | |
| 13 | 2288 | 3432 | |
| 14 | 2464 | 3696 | |
| 15 | 2640 | 3960 | |
| 16 | 2816 | 4224 | |
| 16 $\frac{1}{2}$ | 2904 | 4356 | |
| 17 | 2992 | 4488 | |
| 18 | 3168 | 4752 | |
| 19 | 3344 | 5016 | |
| 20 | 3520 | 5280 | |

**A Table shewing the true Hour of the day, by a plain
Staff, divided into 10 equal parts**

| Ho. before en
Ho. after noon | | | 12 | II | IO | 9 | 8 | 7 | 6 | 5 | | | | | | | |
|---------------------------------|----|----|----|----|----|---|----|----|-----|----|-----|----|-----|----|-----|-----|---|
| | | | | I | 2 | 3 | 4 | 5 | 6 | 7 | | | | | | | |
| Decemb. | II | II | 5 | b | 6 | 7 | b | 9 | c | 13 | b | 19 | a | 30 | 57 | a | |
| | I | 21 | 5 | b | 6 | 7 | b | 10 | | 13 | c | 19 | b | 30 | b | 59 | a |
| | 21 | 2 | 5 | c | 6 | b | 7 | c | 10 | a | 14 | | 20 | a | 32 | 60 | a |
| | II | 13 | 6 | a | 6 | c | 8 | a | 10 | c | 14 | c | 21 | b | 37 | 78 | b |
| | 30 | 23 | 7 | | 7 | b | 9 | | II | b | 16 | | 23 | | 40 | 108 | |
| | 20 | 2 | 7 | c | 8 | a | 10 | | 12 | c | 17 | b | 26 | b | 48 | 136 | |
| | 9 | 13 | 8 | c | 9 | a | II | | 14 | | 19 | b | 30 | | 62 | a | |
| | 30 | 23 | 10 | | 10 | b | 12 | a | 16 | c | 22 | a | 36 | b | 72 | a | |
| | 20 | 2 | II | a | 12 | | 14 | | 18 | | 26 | | 46 | | 182 | | |
| | 10 | 13 | 13 | | 13 | c | 16 | | 21 | | 31 | a | 62 | c | | | |
| | 28 | 21 | 15 | | 16 | | 18 | c | 24 | c | 39 | | 97 | a | | | |
| | 18 | 3 | 17 | b | 18 | b | 22 | | 29 | c | 51 | | 210 | | | | |
| Jan. | 8 | 13 | 20 | b | 21 | c | 26 | | 36 | | 70 | c | | | | | |
| | 29 | 23 | 24 | | 25 | b | 31 | | 46 | | 110 | | | | | | |
| | 19 | 2 | 28 | | 29 | c | 37 | | 59 | | 208 | | | | | | |
| | 9 | II | 32 | | 34 | b | 44 | | 76 | | 629 | | | | | | |
| | 30 | 21 | 36 | | 39 | | 51 | | 97 | | | | | | | | |
| | 21 | I | 39 | | 42 | b | 56 | b | 117 | | | | | | | | |
| | II | II | 40 | | 43 | c | 59 | | 126 | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |

Note that a Stande for quarter of a part, b for half a part, and c for three quarters.

*Note that a Stunde for quarter of
a part, b for half a part, and c
for three quarters.*

To find the hour of the day by this Table.

Take a Staff of what length you please, and (with a Pair of Com-
passes) divide it into 10 equal parts, marking them upon the Staff;
then in some plain level place, where the Sun doth shine, set it up
right, and mark where the end of the shadow thereof falls, which
done, measure with your Staff, the length of the shadow and note the
parts it contains, which find out in this Table, against the day of the
Month, and over head, you have the true hour of the day.

Suppose the 9 of April or 13 of August. I should find the shadow of
the Staff to be 30 partes and a quarter (that is three Staff length and a
quarter) therefore seeking in the Table against the said dayes I see
over-head, that it is then either 7 a clock in the morning or 5 in the
afternoon so that if your observation was in the morning it was 7
but if in the after noon. 5 a clock:

*By this Example, you may see the ease, and excellent use of the Table
which is as ready as any movable Sun-Dyal; so that wheresoever you are
or travel, you may (having this Book about you) speedily know the true hour, &c.*

*A Perpetual Table of Break of day, Sun rise, planetary
hour, etc. in the Latitude of London*

| | Break
of day | Twi
light | sun
rise | sun
set | long
day | long
night | H
by D | H
by N |
|---------|-----------------|--------------|-------------|------------|-------------|---------------|-----------|-----------|
| | h m | h m | h m | h m | h m | h m | h m | h m |
| Janu | 15.54 | 6.6 | 8.23 | 58 | 7.56 | 16.4 | 0.40 | 1.20 |
| | 15.4 | 6.18 | 7.49 | 4.11 | 8.22 | 15.38 | 0.42 | 1.18 |
| | 15.35 | 6.25 | 7.34 | 4.26 | 8.52 | 15.8 | 0.44 | 1.16 |
| Febr | 15.17 | 6.43 | 7.17 | 4.45 | 9.26 | 14.34 | 0.47 | 1.13 |
| | 15.0 | 7.0 | 6.59 | 5.10 | 9.52 | 13.58 | 0.50 | 1.10 |
| | 14.45 | 7.15 | 6.47 | 5.18 | 10.36 | 13.24 | 0.54 | 1.6 |
| March | 14.20 | 7.40 | 6.23 | 5.30 | 11.14 | 12.46 | 0.56 | 1.4 |
| | 13.59 | 8.1 | 6.06 | 5.01 | 11.0 | 12.0 | 1.0 | 1.0 |
| | 13.34 | 8.22 | 5.43 | 6.18 | 11.36 | 11.24 | 1.3 | 0.57 |
| | 13.55 | 8.55 | 5.20 | 6.40 | 12.20 | 10.40 | 1.7 | 0.53 |
| April | 12.38 | 9.22 | 4.58 | 7.21 | 12.4 | 9.56 | 1.10 | 0.50 |
| | 12.2 | 9.58 | 4.40 | 7.20 | 12.4 | 9.20 | 1.13 | 0.47 |
| | 11.50 | 1.30 | 4.22 | 7.38 | 12.5 | 8.44 | 1.16 | 0.44 |
| May | 11.0.30 | 11.30 | 3.08 | 5.15 | 12.42 | 8.18 | 1.18 | 0.42 |
| | All | No | 3.55 | 5.16 | 10 | 7.50 | 1.20 | 0.40 |
| | 1 day | night | 5.50 | 8.10 | 16 | 7.40 | 1.21 | 0.39 |
| June | 11 and | but | 5.57 | 8.3 | 16 | 7.32 | 1.21 | 0.39 |
| | 11 | Tw | 5.50 | 8.10 | 16 | 7.40 | 1.22 | 0.38 |
| | 1 Night | light | 5.57 | 8.3 | 16 | 7.54 | 1.20 | 0.40 |
| July | 11.0.42 | 11.18 | 4.97 | 5.15 | 12 | 8.18 | 1.18 | 0.4 |
| | 11.22 | 10.38 | 4.21 | 7.39 | 15 | 8.42 | 1.16 | 0.44 |
| | 12.0 | 10.0 | 4.39 | 7.22 | 14 | 6.18 | 1.14 | 0.46 |
| August | 11.2.21 | 9.39 | 4.58 | 7.14 | 4 | 6.56 | 1.10 | 0.50 |
| | 13.0 | 9.0 | 5.16 | 6.44 | 13 | 10.32 | 1.7 | 0.53 |
| | 13.30 | 8.30 | 5.35 | 6.25 | 12 | 11.14 | 1.3 | 0.57 |
| Septem | 11.3.59 | 8.1 | 5.56 | 6.12 | 8 | 11.52 | 1.0 | 1.0 |
| | 11.4.19 | 7.41 | 6.26 | 5.44 | 11 | 12.32 | 1.57 | 1.3 |
| | 14.48 | 7.12 | 6.36 | 5.24 | 10 | 12.12 | 0.54 | 1.6 |
| October | 11.5.0 | 7.0 | 6.56 | 4.10 | 8 | 12.52 | 0.50 | 1.10 |
| | 11.5.18 | 6.47 | 7.15 | 4.45 | 9 | 12.30 | 0.47 | 1.13 |
| | 15.37 | 6.27 | 7.34 | 4.26 | 8 | 12.15 | 0.44 | 1.16 |
| Novem | 11.5.45 | 6.17 | 7.49 | 4.11 | 8 | 12.38 | 0.42 | 1.18 |
| | 11.5.54 | 6.6 | 8.13 | 59 | 7 | 12.4 | 0.40 | 1.20 |
| | 15.37 | 6.3 | 8.40 | 3.50 | 7 | 12.20 | 0.39 | 1.21 |
| Decem | 11.6.0 | 6.0 | 8.13 | 3.47 | 7 | 12.26 | 0.38 | 1.22 |
| | 11.5.8 | 6.2 | 8.8 | 3.52 | 7 | 12.16 | 0.39 | 1.21 |

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are thus to be used ; as explained in this following

Example.

Suppose you would know what days of the month any of the usual Feasts fall on in the Year 1681.

First, You find by the former Tables that B is the *Dominical Letter* for that Year, and also 10 is the *Prime*, (or *Golden Number*): Therefore seek the *Dominical Letter* on the left side of the Table, and in the Table of the *Golden Numbers* between the two lines, one above, and the other below, find 10 the *Golden Number*, and in the same row you will find that *Shrove-Sunday* falls on the 13th of *February* ; *Easter-Day* the 3^d of *April* ; *Rogation-Sunday* May the 9th ; *Ascension-Day*, May 12 ; *Whit-Sunday*, May 22 ; *Trinity Sunday*, May 29 ; *Advent-Sunday*, Nov. 27.

The Use of the Table of the Essential Dignities of the Planets.

Every Planet hath two Signs for his Houses, except ☉ and ☽, they have but one apiece ; ☿ hath ♉ and ♊ ; ♀ hath ♋ and ♌ ; ☿ hath ♍ and ♏ ; ☽ hath ♐ and ♑ ; ☽ hath ♒, &c. One of these Houses is called *Diurnal*, noted with the letter D ; the other is *Nocturnal*, noted by the letter N. In these Signs the Planets have their *Exaltations*, which are noted in the third Column ; as the ☉ in the 19 ♋. ☽ in the 3 ♌. ♀ in 23 degrees, &c. are exalted.

These 12 Signs are divided into four *Triplicities* ; the 4th Column tells you what Planet, or Planets, both Night and Day governs each *Triplicity* ; as over against ♋. ♌. ♏. you find ☉. ♉. viz. ☉ governeth by Day in that *Triplicity*. Over against ♍. ♐. ♑. you

D

you

you find ♀ and ♃; viz. that ♀ hath domination by Day, and ♃ by Night, in that Triplicity. Over against II. ☿. ♀. you find ♄. ♀. which rule as afore-said. Over against III. ☿. you find ♂. which (according to *Ptolomy*) ruleth only that Triplicity both Day and Night. Over against V, in the 5, 6, 7, 8, 9, Columns, you find ♄ 6. ♀ 14. which tells you the first 6 degrees of V are the terms of ♄. from 6 to 14 the terms of ♀, &c.

Over against V, in the 10, 11, 12, Columns, you find ♂ 10. ☉ 20. ♀ 30. viz. the first 10 degrees of V are the Face of ♂; from 10 to 20, the Face of ☉; from 20 to 30, the Face of ♀, &c.

Over against V, in the 13 Column, you find ♀ detriment; viz. ♀ being in V, is in a Sign opposite to one of her Houses, and so is said to be in her Detriment.

Over against V in the 14 Column, you find ♄, and over his head fall; that is, ♄ when he is in V, opposite to ☿ (his Exaltation) and so is unfortunate, &c.

A Planet dignified as above-said, is said to be in his Essential Dignity. Accidental Dignities are, when Planets are casually in an Angle or succedent House, direct free from combustion.

A Planet in his House or Exaltation, being significant of any Person, denotes him to be in a happy and prosperous Condition, not wanting for the Goods of this Life.

A Planet debilitated, as being in detriment, or fall, and afflicted, denotes the Querent to be in a very low and mean Condition, much dejected and disconsolate.

The Use of the Table of the Planetary or Unequal Hours for every Night and Day in the Year.

To find what Planetary Hour it is, and also what Planet reigneth that hour.

You must learn at what hour and minute the Sun doth rise upon the day proposed; which you may find in each page of the Almanack, and also the true hour of the day at any time proposed: Then observe how many hours and minutes the said time is after Sun rising; the number of which hours multiply by 60, and to the Product add the odd minutes, (if there be any) then the Aggregate divided by the number of minutes that a Planet reigneth, the Quotient will shew the number of a Planetary hour.

Example.

Suppose that when the Sun riseth at 8 of the Clock, as upon *Saturday* the 8th of *January* 1681 it doth, and it be required to know what Planetary Hour it is at 11 a Clock before noon the same day; therefore because 11 a Clock is 3 hours after 8, the Sun's rising, multiply 3 by 60, and the Product is 180; which being divided by 40, (for so many minutes are in a Planetary Hour that day) the Quotient is 4 hours 30 minutes: Therefore you may conclude that there are 30 minutes spent of the Planetary Hour.

Having found what Planetary Hour it is, and would know what Planet doth reign that hour, do thus;

Seek the day of the Week in the precedent Table, and the hour of the day on the top of the Table, and in the common Angle of Meeting you will find the Planet that governeth that hour: And in the other

precedent Table on the right hand, which is for the Night, is the Planet that governeth the same hour by Night.

Example.

Upon the aforesaid day, (the 8th of *January* 1681) it is required to find what Planet reigneth at 11 a Clock before Noon the same day ; Therefore according to the aforesaid Rule, you may find there are 30 minutes spent of the fourth Planetary Hour ; therefore first find *Monday* on the side of the said precedent Table, then look for 4 in the head of the Table, and in the common Angle of Meeting you will find δ to be the Governor that rules the 4th hour of the same day.

Of the Properties and natural Effects of the Seven Planets.

Having now shewed what Planet rules each Hour, it will be necessary to shew the Natures, Qualities, and Dispositions of them.

h denotes in general, Lands, Houses, Tenements, Country-men, Ancient People, &c.

y signifies Judges, Senators, Divines, Riches, Law, Religion, &c.

δ signifies Souldiers, Physicians, War, Strife and Debate, Theft, and all manner of Cruelty, &c.

\odot signifies Honour, Greatness, noble Persons of all degrees.

q denotes Women, Pleasure, Pastimes, all kinds of Delights, Mirth, sweet Odours, &c.

v denotes all kinds of Scribes or Secretaries, Mathematicians, Servants, &c.

d signifies

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A Table shewing what Planets Rules every hour of the Day and Night.

| the hows of y ^e Day. | | | | | | | | | | | | the hows of y ^e Night. | | | | | | | | | | | | |
|---------------------------------|---|---|---|---|---|---|---|---|---|----|----|-----------------------------------|---|---|---|---|---|---|---|---|---|----|----|----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| Sund | ☉ | ☿ | ♊ | ☾ | ♈ | ♊ | ☿ | ☉ | ♏ | ♊ | ♋ | ♌ | ♍ | ☿ | ☉ | ♏ | ♊ | ☾ | ♈ | ♊ | ☿ | ☉ | ♏ | ♊ |
| Mond | ☾ | ♈ | ♊ | ☉ | ☉ | ♏ | ♊ | ☾ | ☉ | ♏ | ♊ | ☾ | ☉ | ☉ | ☾ | ♈ | ♊ | ☉ | ☉ | ♏ | ♊ | ☾ | ☉ | ☉ |
| Tuesd | ☿ | ☉ | ♊ | ☉ | ☉ | ♏ | ♊ | ☉ | ☉ | ♏ | ♊ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ |
| Wednes | ♊ | ☉ | ♈ | ☉ | ☉ | ♏ | ♊ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ |
| Thursd | ♋ | ☿ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ |
| Fryd | ♌ | ♊ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ |
| Saturd | ♍ | ♋ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ | ☉ |

Note that to every day in the week there is appropriated a several Planets as @ to Sunday, to Monday, &c. & therefore each planet governs y^e first hours, by this Table y^e governs per eune that y^e sun governs y^e first hour after sun rising on sund. y^e governs y^e third. y^e Moon governs y^e fourth planetary hour, & so on. y^e governs y^e twelfth planetary hour of y^e Night. that is y^e first hour of y^e 2. @ y^e 3. as you may see in y^e same Column. And stand y^e like by y^e right.

Note that to every day in the week there is appropriated a several Planets as ☉ to Sunday, ☾ to Monday, ☿ to Tuesday, &c. & therefore each planet governs y^e first hour; As by this Table y^e you may perceive that y^e sun governs y^e first hour after sun rising on Sunday, & y^e Tuesday, & y^e third, y^e Moon governs y^e fourth planetary hour, &c. so on, & governs y^e 12th planetary hour of y^e Night. But is after June yet y^e 2. ☉ y^e 3. as you may see in y^e same column, & stand y^e 12th by y^e right.



D signifies Women in general, all common and vulgar Persons.

The Use of the Table that sheweth the Altitude of the Sun every hour of Day, and each day of the Year ; with the Rising and Setting of the Sun.

The Description of the Table.

The Months are on the head of the Table, each month noted with the proper Letter belonging to the month, as J for *January*, F for *February*, M for *March*, &c.

The Hour-lines that bend downward, are the Summer-hours, those that bend upward are the Winter-hours ; the small Lines that fall perpendicularly are the Parallel Lines of the days of the Year.

Those that run thwart them at right Angles with these, are the Parallels of the Suns Altitude, proceeding from the Tangent-Line on the right side of the Table.

The lower Line of the top Margent of the Months, represents the Horizon, where you are to find the rising and setting of the Sun.

The Uses follow.

To find the Altitude of the Sun on any Hour and Day in the Year.

I would know what Altitude the Sun will have the 10th day of *May*, at 9 of the Clock in the Forenoon, or at 3 in the Afternoon, which is all one.

There-

Therefore find the 10th of *May* in the Margent of the Months on the top of the Table; then find the hour of 9 on the right hand of the Table, and note the Hour-Line which passes from 8 on the right side, (which are Morning hours) to 3 on the left side (which are the Afternoon hours); then direct your eye down from the 10th of *May*, in one of the nearest lines that proceeds down-right, until it meets and intersects the said Hour-line; then direct your eye from that Intersection, to one of the thwart Lines that proceeds from the Hour-line, and where that Line meets with the Tangent-Line (on the right side of the Table) to 43, which is the Altitude of the Sun at that day and hour aforesaid: the same is to be understood also of the Winter-Hours.

To find the Rising and Setting of the Sun by the same Table.

The aforesaid 10th of *May*, note what Hour-Line toucheth the lower Line of the Margent of Months, and there you will see that the hour of 4, which proceeds from the Morning Hour-Lines, and you may see that the end of the 4 a Clock Line, doth come short of the said 10th day of *May*; which shews that the Sun rises a little after 4 of the Clock; and so much after 4 as the rising of the Sun is, so much doth the Sun set before 8 at Night.

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*The Explanation and Use of the Tables of the
Suns Right Ascension ; and of the Table of
the Stars Right Ascension and Declination.*

The Explanation of the Tables.

In the Table of the Suns Right Ascension, the first Page contains the first six Months of the Year, and the next Page the other six Months.

In the first Column towards the left hand, are the days of the month, and in the other Columns is the Suns Right Ascension in hours and minutes.

In the Tables of the Stars Right Ascension, there are six Columns ; in the first, towards the left hand, are the names of the Stars ; in the second are the Stars Magnitudes ; in the third, the Right Ascension of the Stars in degrees and minutes ; in the fourth, the Declination in degrees and minutes ; in the fifth, the Right Ascension in hours and minutes ; and in the sixth, the Denomination of the Declination, whether North or South.

The Use of the Tables.

*First, To find the time of the Stars coming upon
the Meridian.*

The Rule.

When you have found the Right Ascension of the Sun and Stars for any day proposed ; then substract the Right Ascension of the Sun from the Right Ascension
of

of the Star : but if the Stars Right Ascension be less than that of the Sun, add thereto 24 hours, and then subtract one from the other ; the remainder after subtraction is the time of the Stars coming upon the Meridian from Noon : and if the remainder exceed 12 hours, subtract 12 hours therefrom, and then the remainder is the time from Midnight.

Example 1.

Suppose the time that the middle of the *Pleiades* comes on the Meridian, were required to the 5th day of *November* 1680.

I find the Stars Right Ascension to be 3 hours 26 minutes, and the Suns Right Ascension to be 15 hours 23 minutes.

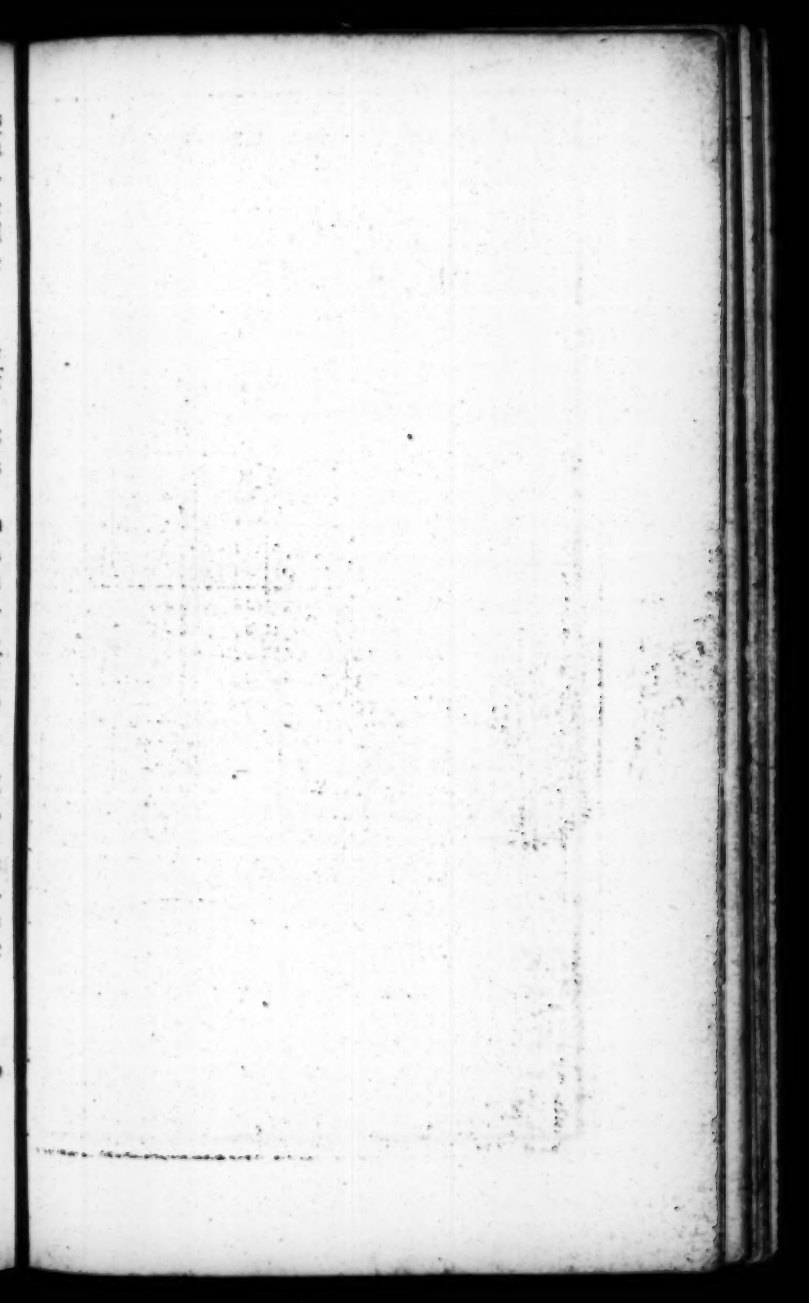
Now because the Suns Right Ascension is more than the Stars, therefore add to the Stars Right Ascension 24 hours, which makes 27 hours 26 minutes ; from which subtracting the Suns Right Ascension, there remains 12 hours 3 minutes ; from which subtracting 12 hours, there remains 3 minutes : which is the time of the *Pleiades* coming to the Meridian after Midnight, which was required.

Example 2.

Suppose the time of *Pegasus lower Wing* coming upon the Meridian on the said 5th of *November* 1680.

I find in the Table the Stars Right Ascension to be 23 h. 55 m. and the Suns Right Ascension to be as before, 15 hours 23 minutes ; which being subtracted from the Stars Right Ascension, leaves 8 hours 32 minutes, the true time of the Stars coming to the Meridian Afternoon.

Secondly,



| A Table of y ^e Suns Right Ascen: | | | | | | |
|---|--------------|--------------|--------------|--------------|--------------|--------------|
| | Janua: | Febr: | March | April. | May. | June. |
| Days | Right Ascen: | Right Ascen: | Right Ascen: | Right Ascen: | Right Ascen: | Right Ascen: |
| | H . M | H . M | H . M | H . M | H . M | H . M |
| 1 | 19.35 | 21.42 | 23.28 | 01.21 | 03.14 | 05.19 |
| 2 | 19.39 | 21.46 | 23.32 | 01.25 | 03.18 | 05.23 |
| 3 | 19.43 | 21.50 | 23.36 | 01.29 | 03.22 | 05.27 |
| 4 | 19.47 | 21.54 | 23.39 | 01.35 | 03.26 | 05.31 |
| 5 | 19.51 | 21.58 | 23.43 | 01.36 | 03.30 | 05.36 |
| 6 | 19.56 | 22.02 | 23.46 | 01.40 | 03.34 | 05.40 |
| 7 | 20.00 | 22.06 | 23.50 | 01.44 | 03.38 | 05.44 |
| 8 | 20.04 | 22.10 | 23.53 | 01.47 | 03.42 | 05.48 |
| 9 | 20.09 | 22.14 | 23.57 | 01.51 | 03.46 | 05.52 |
| 10 | 20.13 | 22.17 | 00.01 | 01.54 | 03.50 | 05.56 |
| 11 | 20.17 | 22.21 | 00.05 | 01.58 | 03.54 | 06.00 |
| 12 | 20.22 | 22.25 | 00.08 | 02.02 | 03.58 | 06.04 |
| 13 | 20.26 | 22.29 | 00.12 | 02.06 | 04.02 | 06.08 |
| 14 | 20.30 | 22.33 | 00.15 | 02.10 | 04.06 | 06.12 |
| 15 | 20.34 | 22.36 | 00.19 | 02.13 | 04.10 | 06.17 |
| 16 | 20.38 | 22.40 | 00.23 | 02.17 | 04.14 | 06.21 |
| 17 | 20.42 | 22.44 | 00.26 | 02.21 | 04.18 | 06.25 |
| 18 | 20.46 | 22.48 | 00.30 | 02.25 | 04.22 | 06.29 |
| 19 | 20.50 | 22.52 | 00.33 | 02.29 | 04.26 | 06.33 |
| 20 | 20.54 | 22.55 | 00.37 | 02.32 | 04.30 | 06.38 |
| 21 | 20.58 | 22.59 | 00.41 | 02.36 | 04.34 | 06.42 |
| 22 | 21.03 | 23.03 | 00.44 | 02.40 | 04.38 | 06.46 |
| 23 | 21.07 | 23.06 | 00.48 | 02.44 | 04.42 | 06.50 |
| 24 | 21.11 | 23.10 | 00.52 | 02.48 | 04.46 | 06.54 |
| 25 | 21.15 | 23.13 | 00.55 | 02.51 | 04.50 | 06.58 |
| 26 | 21.19 | 23.17 | 00.59 | 02.55 | 04.54 | 07.02 |
| 27 | 21.23 | 23.21 | 01.03 | 02.59 | 04.58 | 07.06 |
| 28 | 21.27 | 23.25 | 01.06 | 03.03 | 05.02 | 07.10 |
| 29 | 21.31 | | 01.10 | 03.07 | 05.06 | 07.14 |
| 30 | 21.35 | | 01.14 | 03.10 | 05.11 | 07.19 |
| 31 | 21.38 | | 01.17 | | 05.15 | |

A Table of y^e Suns Right Ascen:

| | July. | August | Septem | Octo: | Novem | Decem |
|------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Days | Right
Ascen: | Right
Ascen: | Right
Ascen: | Right
Ascen: | Right
Ascen: | Right
Ascen: |
| | H · M | H · M | H · M | H · M | H · M | H · M |
| 1 | 07.23 | 09.25 | 11.19 | 13.08 | 15.07 | 17.15 |
| 2 | 07.27 | 09.29 | 11.23 | 13.12 | 15.11 | 17.20 |
| 3 | 07.31 | 09.33 | 11.26 | 13.15 | 15.15 | 17.25 |
| 4 | 07.35 | 09.37 | 11.30 | 13.19 | 15.19 | 17.29 |
| 5 | 07.39 | 09.40 | 11.33 | 13.22 | 15.23 | 17.34 |
| 6 | 07.43 | 09.44 | 11.37 | 13.26 | 15.27 | 17.38 |
| 7 | 07.47 | 09.48 | 11.41 | 13.30 | 15.31 | 17.42 |
| 8 | 07.51 | 09.51 | 11.44 | 13.34 | 15.36 | 17.47 |
| 9 | 07.55 | 09.55 | 11.48 | 13.38 | 15.40 | 17.51 |
| 10 | 07.59 | 09.58 | 11.51 | 13.41 | 15.45 | 17.56 |
| 11 | 08.03 | 10.02 | 11.55 | 13.45 | 15.49 | 18.00 |
| 12 | 08.07 | 10.06 | 11.59 | 13.49 | 15.53 | 18.05 |
| 13 | 08.11 | 10.10 | 12.02 | 13.53 | 15.58 | 18.09 |
| 14 | 08.15 | 10.14 | 12.06 | 13.57 | 16.02 | 18.14 |
| 15 | 08.19 | 10.17 | 12.09 | 14.00 | 16.07 | 18.19 |
| 16 | 08.23 | 10.21 | 12.13 | 14.04 | 16.11 | 18.24 |
| 17 | 08.27 | 10.25 | 12.17 | 14.08 | 16.15 | 18.28 |
| 18 | 08.31 | 10.28 | 12.20 | 14.12 | 16.19 | 18.33 |
| 19 | 08.35 | 10.32 | 12.24 | 14.16 | 16.23 | 18.37 |
| 20 | 08.39 | 10.35 | 12.27 | 14.20 | 16.28 | 18.41 |
| 21 | 08.43 | 10.39 | 12.31 | 14.24 | 16.32 | 18.45 |
| 22 | 08.47 | 10.43 | 12.35 | 14.28 | 16.36 | 18.49 |
| 23 | 08.51 | 10.46 | 12.38 | 14.32 | 16.40 | 18.54 |
| 24 | 08.55 | 10.50 | 12.42 | 14.36 | 16.44 | 18.58 |
| 25 | 08.58 | 10.53 | 12.45 | 14.39 | 16.49 | 19.03 |
| 26 | 09.02 | 10.57 | 12.49 | 14.43 | 16.53 | 19.07 |
| 27 | 09.06 | 11.01 | 12.53 | 14.47 | 16.57 | 19.11 |
| 28 | 09.10 | 11.04 | 12.57 | 14.51 | 17.02 | 19.16 |
| 29 | 09.14 | 11.08 | 13.01 | 14.55 | 17.06 | 19.20 |
| 30 | 09.17 | 11.11 | 13.04 | 14.59 | 17.11 | 19.25 |
| 31 | 09.21 | 11.15 | | 15.03 | | 19.30 |

**A Table of γ Magnitudes, Right
Ascension in Hours and Minuts, and
Degrees and Minuts, & γ Declination
North or South of 33 fixed Stars.**

| <i>Names of γ Stars.</i> | <i>M</i> | <i>R. Asc.</i> | <i>Decl.</i> | <i>R. Asc.</i> | <i>N</i> |
|--|----------|-----------------|-----------------|----------------|----------|
| | | <i>D. M. D.</i> | <i>M. H. M.</i> | <i>S</i> | |
| <i>Pole Star or last in γ lictor</i> | 2 | 7.55 | 87.33 | 0.32 | N |
| <i>Andromedæ's Girdle.</i> | 2 | 12.31 | 33.50 | 0.50 | N |
| <i>Medusæ's head.</i> | 3 | 41.27 | 39.35 | 2.46 | N |
| <i>Perseus right side.</i> | 2 | 44.30 | 48.33 | 2.58 | N |
| <i>Middle of the Pleiades.</i> | 5 | 51.22 | 23.06 | 3.26 | N |
| <i>Bull's eye.</i> | 1 | 64.0 | 15.48 | 4.16 | N |
| <i>Hercus or Goat.</i> | 1 | 72.44 | 45.36 | 4.51 | N |
| <i>Orion's left foot.</i> | 1 | 74.30 | 8.38 | 4.58 | S |
| <i>Midstar in Orion's Girdle.</i> | 2 | 79.45 | 1.28 | 5.19 | S |
| <i>Orion's right shoulder.</i> | 2 | 84.5 | 7.18 | 5.36 | N |
| <i>Auriga. or Waggoner.</i> | 2 | 84.45 | 44.56 | 5.39 | N |
| <i>Great Dog.</i> | 1 | 97.34 | 16.13 | 6.30 | N |
| <i>Castor. or Apollo.</i> | 2 | 108.00 | 32.30 | 7.12 | N |
| <i>Little dog.</i> | 1 | 110.20 | 6.6 | 7.21 | N |
| <i>Poullux or Hercules.</i> | 2 | 110.25 | 28.48 | 7.22 | N |
| <i>Hydraes heart.</i> | 1 | 137.36 | 7.10 | 9.10 | S |
| <i>Lyons heart.</i> | 1 | 147.30 | 13.39 | 9.50 | N |
| <i>Great Bears fore guard.</i> | 2 | 160.48 | 63.32 | 10.43 | N |
| <i>Lyons tail.</i> | 1 | 172.45 | 16.32 | 11.31 | N |
| <i>Virgins Spike.</i> | 1 | 196.43 | 9.11 | 13.07 | N |
| <i>Last in Great Bears tail.</i> | 2 | 203.36 | 51.5 | 13.34 | N |
| <i>Arcturius.</i> | 1 | 209.56 | 21.4 | 14.00 | N |
| <i>Little Bears fore guard.</i> | 2 | 222.46 | 75.36 | 14.52 | N |
| <i>Brightest in γ Crown.</i> | 3 | 231.00 | 27.43 | 15.34 | N |
| <i>Scorpions heart.</i> | 1 | 242.23 | 25.37 | 16.09 | S |
| <i>Hercules head.</i> | 3 | 254.40 | 14.51 | 16.59 | N |
| <i>Lyra. or harp.</i> | 1 | 276.17 | 38.30 | 18.25 | N |
| <i>Eagle. or Vulture.</i> | 1 | 293.28 | 8.1 | 19.35 | N |
| <i>Swans tail.</i> | 2 | 307.30 | 44.5 | 20.30 | N |
| <i>Dolphins head.</i> | 3 | 307.53 | 15.0 | 20.32 | N |
| <i>Pegassus mouth.</i> | 1 | 321.50 | 8.19 | 21.27 | N |
| <i>Pomahant.</i> | 3 | 339.30 | 31.17 | 22.38 | S |
| <i>Pegassus lower wing.</i> | 2 | 358.50 | 13.22 | 23.55 | N |

*A Table of the Latitudes of the Principal
Cities, Townes, and Islands
in & about Great Britain & Ireland*

| ENGLAND | o. '. | WALES | o. '. |
|-------------|-------|-------------|-------|
| Arundel | 51.00 | Anglesey | 53.28 |
| Barwick | 55.54 | Brecknock | 52.30 |
| Bedford | 52.15 | Cardigan | 52.12 |
| Bristol | 51.35 | Carmarthen | 51.58 |
| Buckingham | 52.10 | Carnarvan | 53.18 |
| Cambridge | 52.12 | Denbigh | 53.15 |
| Canterbury | 51.25 | Flint | 53.18 |
| Carlisle | 55.20 | Landaffe | 51.36 |
| Chester | 53.20 | Monmouth | 51.51 |
| Chichester | 50.48 | Montgomery | 51.56 |
| Colchester | 52.08 | Pembroke | 51.46 |
| Dover | 51.20 | Rednor | 52.20 |
| Derby | 53.00 | St. Davids | 52.00 |
| Dorchester | 50.50 | ISLANDS | |
| Durham | 55.00 | Garnsey | 49.30 |
| Exeter | 50.50 | Larsey | 49.12 |
| Falmouth | 50.22 | Lundy | 51.22 |
| Gulford | 51.12 | Man | 54.24 |
| Gloucester | 52.00 | Portland | 50.30 |
| Hartford | 51.50 | Wight | 50.39 |
| Hereford | 52.07 | SCOTLAND | |
| Huntington | 52.30 | Aberdine | 57.32 |
| Ipswich | 52.20 | Dumblain | 56.21 |
| Kendall | 54.24 | Dundee | 56.30 |
| Lancaster | 54.15 | Dunkel | 56.48 |
| Leicester | 52.45 | Edenburgh | 56.00 |
| Lincoln | 53.20 | Glasgow | 55.50 |
| London | 51.32 | Orkney | 60.06 |
| Northampton | 52.24 | S. Andrews | 56.39 |
| Norwich | 52.45 | Starling | 56.12 |
| Newcastle | 55.12 | IRELAND | |
| Nottingham | 53.00 | Antrim | 54.30 |
| Oxford | 51.43 | Arglas | 54.10 |
| Portsmouth | 51.08 | Armagh | 54.14 |
| Plmouth | 50.36 | Clare | 52.34 |
| Reading | 51.40 | Cork | 51.53 |
| Salisbury | 51.12 | Dredagh | 53.38 |
| Sassford | 52.50 | Dublin | 54.27 |
| Shrewsbury | 52.50 | Dundalk | 53.52 |
| Stamford | 52.44 | Galloway | 53.02 |
| Truro | 50.30 | Kildare | 53.00 |
| Warwick | 52.30 | Knockfergus | 54.37 |
| Winchester | 50.20 | Kinsale | 51.41 |
| Worcester | 52.25 | Limerick | 52.30 |
| York | 54.00 | Waterford | 52.09 |
| | | Wexford | 52.18 |

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Secondly, *The time being given, to find what Star will come to the Meridian about the said time.*

The Rule.

To the Suns Right Ascension add the time from Noon, at which the Stars coming to the Meridian is required, the sum is the Right Ascension of the Star that will come to the Meridian at that time; with which enter the Table, and look what Stars Right Ascension agrees with the Right Ascension before found, or nearest thereto, and that is the Star sought for.

Example.

Suppose *April* the 1st, I desire to know what Star will come upon the Meridian at 3 hours after Midnight.

The Suns Right Ascension that day is, 1 hour 21 min. the time from Noon is 13 hours; which added to the Suns Right Ascension makes 16 hours 21 min. the nearest in the Table is the *Scorpions Heart*; whose Right Ascension is 16 hours 9 min. and comes to the Meridian 12 min. after 4; and *Hercules Head*, whose Right Ascension is 16 h. 50 m. from which take 16 h. 21 m. and there rests 29 m. after 4 of the Clock, which is the time of *Hercules Head* coming upon the Meridian. Note, That 16 hours from Noon, is 4 of the Clock next morning.

A brief Concordance of Years, with some Remarkable Passages, since the beginning of the Reign of Queen Elizabeth 1558, unto the Year 1678.

| <i>Ann.</i> | <i>Anno Reg</i> | |
|-------------|-----------------|--|
| <i>Dom</i> | | <i>Queen Elizabeth began her Reign,
Nov. 17. 1558.</i> |
| 1558 | 1 | A Parliament called. |
| 1559 | 2 | Monasteries suppressed. |
| 1560 | 3 | War with Scots and French. |
| 1561 | 4 | St. Paul's Steeple burnt. |
| 1562 | 5 | Tempest and Earthquake. |
| 1563 | 6 | 20000 died of the Plague in London. |
| 1564 | 7 | Thames Frozen. |
| 1565 | 8 | Peace with France. |
| 1566 | 9 | King James born. |
| 1567 | 10 | Royal Exchange finished. |
| 1568 | 11 | A dry Summer. |
| 1569 | 12 | Rebellion in the North. |
| 1570 | 13 | Wars with Scotland. |
| 1571 | 14 | Earthquake in Herefordshire. |
| 1572 | 15 | Massacre in France. |
| 1573 | 16 | Earl of Essex goes to Ireland. |
| 1574 | 17 | Counterfeited Spirits punished. |
| 1575 | 18 | An Earthquake. |
| 1576 | 19 | Frobishers North-West Voyage. |
| 1577 | 20 | Infection at Oxford Affizes. |
| 1578 | 21 | A great Snow. |

| | | |
|------|----|---|
| 1579 | 22 | A Curious Locksmith. |
| 1580 | 23 | A great Earthquake and Blazing Star. |
| 1581 | 24 | Three Jesuites Executed. |
| 1582 | 25 | New Kalendar began. |
| 1583 | 26 | Earthquake in <i>Dorsetshire</i> . |
| 1584 | 26 | <i>Nantwich</i> Burnt. |
| 1585 | 28 | Tobacco first used in <i>England</i> . |
| 1586 | 29 | <i>Ludgate</i> new built. |
| 1587 | 30 | <i>Blackwel-Hall</i> new built. |
| 1588 | 31 | <i>Spanish</i> Armada overthrown: |
| 1589 | 32 | Duke of <i>Guise</i> Murthered. |
| 1590 | 33 | <i>Christs</i> Colledg in <i>Cambridg</i> founded. |
| 1591 | 34 | <i>East-India</i> Company began. |
| 1592 | 35 | The <i>Thames</i> almost dry. |
| 1593 | 36 | 16635 died of the Plague in <i>London</i> . |
| 1594 | 37 | Great Tempest. |
| 1595 | 38 | A great Dearth. |
| 1596 | 39 | Earl of <i>Effex</i> takes <i>Cadiz</i> in <i>Spain</i> . |
| 1597 | 40 | Wheat thirteen Shillings a Bushel. |
| 1598 | 41 | Great Tempests and Frosts. |
| 1599 | 42 | Earl of <i>Effex</i> goes to <i>Ireland</i> . |
| 1600 | 43 | Ambassadors from <i>Russia</i> and <i>Barbary</i> . |
| 1601 | 44 | Earl of <i>Effex</i> Beheaded. |
| 1602 | 45 | Queen <i>Elizabeth</i> died at <i>Richmond</i> . |

Ann. *Dom.* *Ann. Reg.* King James began his Reign the 24th
of March, 1602.

| | | |
|------|----|--|
| 1603 | 1 | 30978 died of the Plague. |
| 1604 | 2 | Peace with <i>Spain</i> . |
| 1605 | 3 | Powder Treason. |
| 1606 | 4 | King of <i>Denmark</i> came to <i>England</i> . |
| 1607 | 5 | <i>More-fields</i> beautified. |
| 1608 | 6 | Oath of Allegiance: |
| 1609 | 7 | New Exchange in the <i>Strand</i> built. |
| 1610 | 8 | King of <i>France</i> Murdered. |
| 1611 | 9 | <i>Bartholomew</i> Legate, an <i>Arrian</i> , burnt. |
| 1612 | 10 | Prince <i>Henry</i> dies. <i>L. Elizabeth</i> Married. |
| 1613 | 11 | Artillery Company revived. |
| 1614 | 12 | <i>Middleton's</i> River began. |
| 1615 | 13 | <i>Smithfield</i> Paved. |
| 1616 | 14 | <i>Charles</i> created Prince of <i>Wales</i> . |
| 1617 | 15 | <i>Haddock</i> the sleeping Preacher. |
| 1618 | 16 | Sir <i>Walter Raleigh</i> beheaded. |
| 1619 | 17 | Queen <i>Ann</i> dies. |
| 1620 | 18 | King of <i>Bohemia</i> overthrown. |
| 1621 | 19 | <i>Phil.</i> 3d King of <i>Spain</i> dies, <i>Phil.</i> 4th suc. |
| 1622 | 20 | Prince <i>Charles</i> goes into <i>Spain</i> . |
| 1623 | 21 | Downfal in <i>Black-Friers</i> . |
| 1624 | 22 | <i>Amboyna's</i> Bloody Cruelty. |

King

Ann.

Dom.

Ann. Reg. 1

King Charles the First began his Reign
March 27. 1624.

-
- | | | |
|------|----|--|
| 1625 | 1 | 54265 die ; of the Plague 35417. |
| 1626 | 2 | War with <i>Spain</i> and <i>France</i> . |
| 1627 | 3 | Voyage to the Isle of <i>Rhe</i> . |
| 1628 | 4 | Duke of <i>Buckingham</i> stab'd. |
| 1629 | 5 | <i>New England</i> Planted. |
| 1630 | 6 | King <i>Charles</i> the Second born <i>May</i> 29. |
| 1631 | 7 | Battel at <i>Lypsick</i> . <i>Tilly</i> slain. |
| 1632 | 8 | <i>London-Bridge</i> Burnt. |
| 1633 | 9 | His Royal Highness the Duke of <i>York</i> born. |
| 1634 | 10 | Ship-Money first taxed. |
| 1635 | 11 | Old <i>Parr</i> died, aged 160 years. |
| 1636 | 12 | <i>Dutch</i> take the <i>Spanish</i> Silver Fleet. |
| 1637 | 13 | <i>English</i> Liturgy sent into <i>Scotland</i> . |
| 1638 | 14 | The <i>Scots</i> National Covenant. |
| 1639 | 15 | <i>Dutch</i> beat the <i>Spaniards</i> at <i>Dover</i> . |
| 1640 | 16 | The first Long Parliament began. |
| 1641 | 17 | Earl of <i>Strafford</i> Beheaded. |
| 1642 | 18 | <i>Edg-Hill</i> Fight. |
| 1643 | 19 | <i>Newbery</i> first Fight. |
| 1644 | 20 | <i>Newbery</i> second Fight. |
| 1645 | 21 | Arch-Bishop of <i>Canterbury</i> Beheaded. |
| 1646 | 22 | Lord <i>Fairfax</i> takes <i>Oxford</i> . |
| 1647 | 23 | King taken by Parliament and Army. |
| 1648 | 24 | King traiterously Beheaded. |

King

| <i>Anno</i> | <i>Anno</i> | <i>Dom</i> | |
|-------------|-------------|------------|--|
| | | | <i>King Charles the Second began his
Reign the 30th of January, 1648.</i> |
| 1649 | 1 | | Powder Blow in <i>Tower-streer</i> . |
| 1650 | 2 | | King <i>Charles II</i> , Crown'd in <i>Scotland</i> . |
| 1651 | 3 | | <i>Worcester</i> Fight. Mr. <i>Love</i> Beheaded. |
| 1652 | 4 | | Wars with <i>Holland</i> . |
| 1653 | 5 | | Old and New Parliament dissolved. |
| 1654 | 6 | | Peace with <i>Holland</i> . |
| 1655 | 7 | | Wars with <i>Spain</i> . |
| 1656 | 8 | | Two Tides in three hours, <i>Octob. 3</i> . |
| 1657 | 9 | | <i>Mardike</i> taken by the <i>English</i> and <i>French</i> . |
| 1658 | 10 | | <i>Cromwel</i> died. |
| 1659 | 11 | | Sir <i>George Booth</i> and General <i>Mowck</i>
for the King. |
| 1660 | 12 | | King <i>Charles</i> the II ^d joyfully restored. |
| 1661 | 13 | | King <i>Charles</i> the II ^d Crown'd <i>April 23</i> . |
| 1662 | 14 | | Married to Queen <i>Katherine</i> . |
| 1663 | 15 | | King and Queen at <i>Windsor</i> . |
| 1664 | 16 | | Three Blazing Stars seen. |
| 1665 | 17 | | 97351 die, of the Plague 68586. |
| 1666 | 18 | | 13200 Houses burnt in <i>London</i> . |
| 1667 | 19 | | The <i>Dutch</i> Hostile Treaty. |
| 1668 | 20 | | Lord <i>Fitz-Harding</i> Lord Treasurer. |
| 1669 | 22 | | Prince of <i>Tuscany</i> arriv'd in <i>England</i> . |
| 1670 | 23 | | Dutchess of <i>Orleans</i> his Majest. Sister died. |
| 1671 | 23 | | Dutchess of <i>York</i> , and Earl of <i>Manch</i> died. |
| 1672 | 24 | | War Proclaimed with <i>Holland</i> by the <i>Eng-
lish</i> and <i>French</i> . |
| 1673 | 25 | | Sir <i>Tho. Osburn</i> created Earl of <i>Dandy</i> , and
Lord Treasurer. |

| | | |
|------|----|--|
| 1674 | 26 | His Majesty accepted the Freedom of the City of <i>London</i> . |
| 1675 | 27 | The Foundation laid of <i>St. Pauls</i> . |
| 1676 | 28 | 600 Houses burnt in <i>Southwark</i> . |
| 1677 | 29 | Prince of <i>Orange</i> married to the Lady <i>Mary</i> the Duke of <i>Yorks</i> Daughter. |

This Table may be necessary for finding the Years of our Lord, corresponding to the Years of the King; which sometimes in old Evidences are only exprest by the Years of the King, and not the Years of our Lord. As suppose a Deed were dated in the 3d Year of the Reign of King *James*; this Table will inform you that that Year of the King, was in the Year of our Lord 1605, &c. Also the most remarkable Passages that hath happened in *England* any Year since the beginning of the Reign of Queen *Elizabeth*.

And for time before the Reign of Queen *Elizabeth*, you may make use of this following Table of the Kings Reigns in Deeds of older Date.

The use of which Table may appear in the answer of such Questions as these.

How long is it since the 30th Year of the Reign of King *Henry* the 6th?

Which is thus found. *Henry* 6th began his Reign, *Anno Dom.*

To which add 30 the Year of the King

Which being subtracted from the present

Year required, suppose

There remains the Years since

1422

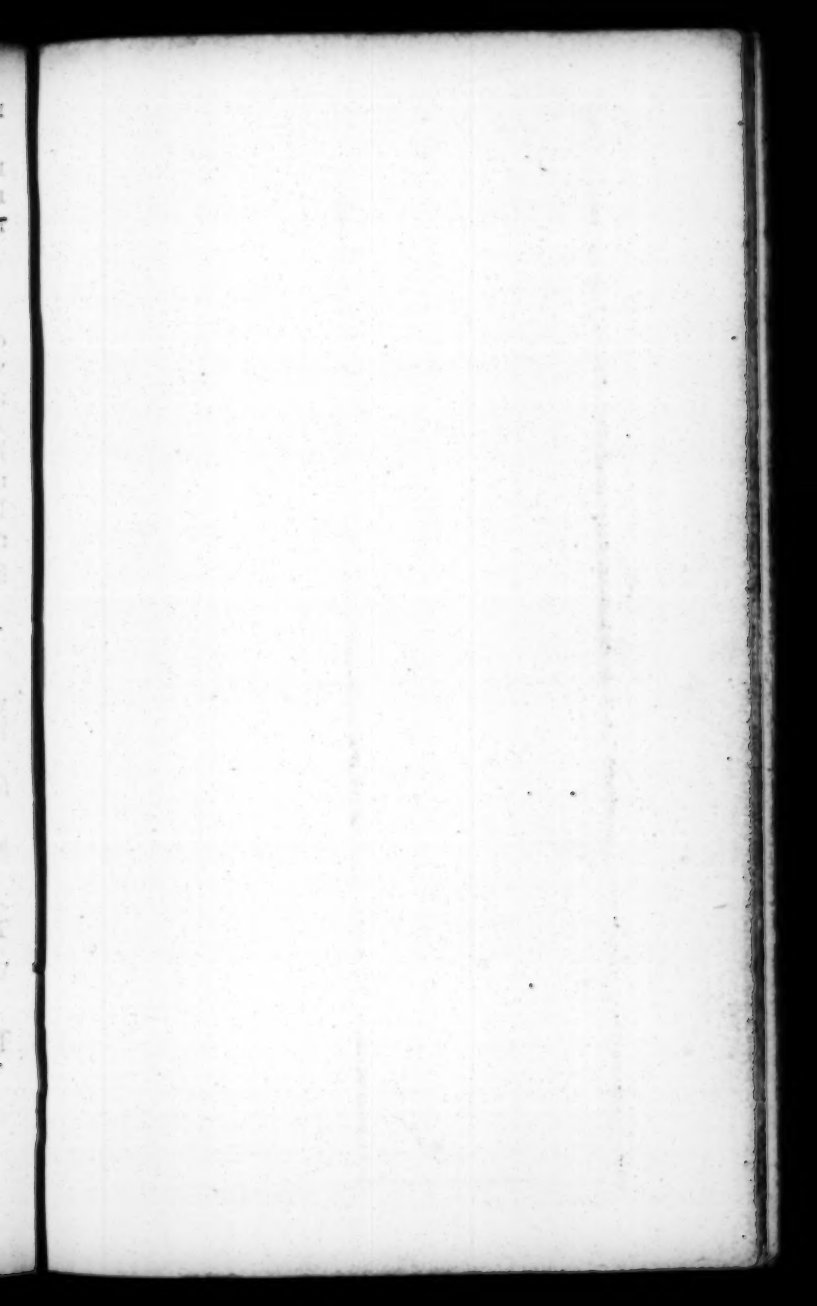
30

1680

0238

A Table of the Kings Reigns.

| <i>The Kings
Names.</i> | <i>Began their
Reigns.</i> | <i>Reigned
year. mon. days.</i> |
|-----------------------------|--------------------------------|-------------------------------------|
| Will. Conq. | 1066 Oct. 14 | 22 y 11 m 22 d |
| Will. Rufus | 1087 Sept. 9 | 12 y 11 m 18 d |
| Henry 1 | 1100 Aug. 1 | 35 y 4 m 11 d |
| K. Stephen | 1135 Dec. 2 | 18 y 11 m 18 d |
| Henry 2 | 1145 Oct. 25 | 34 y 9 m 2 d |
| Richard 1 | 1189 July 6 | 9 y 9 m 22 d |
| K. John | 1199 Apr. 6 | 17 y 7 m 0 d |
| Henry 3 | 1216 Oct. 19 | 56 y 1 m 0 d |
| Edward 1 | 1272 Nov. 16 | 34 y 8 m 9 d |
| Edward 2 | 1307 July 7 | 19 y 7 m 6 d |
| Edward 3 | 1326 Jan. 25 | 50 y 5 m 7 d |
| Richard 2 | 1377 Jun. 21 | 22 y 3 m 14 d |
| Henry 4 | 1399 Sept. 29 | 13 y 6 m 3 d |
| Henry 5 | 1412 Mar. 20 | 9 y 5 m 24 d |
| Henry 6 | 1422 Aug. 31 | 38 y 6 m 16 d |
| Edward 4 | 1460 Mar. 4 | 22 y 1 m 8 d |
| Edward 5 | 1483 Apr. 9 | 0 y 2 m 8 d |
| Richard 3 | 1483 Jun. 10 | 2 y 2 m 5 d |
| Henry 7 | 1485 Aug. 22 | 23 y 8 m 19 d |
| Henry 8 | 1509 Apr. 22 | 37 y 10 m 2 d |
| Edward 6 | 1546 Jan. 28 | 6 y 5 m 19 d |
| Q. Mary | 1553 July 6 | 5 y 4 m 22 d |
| Q. Eliz. | 1558 Nov. 17 | 44 y 4 m 15 d |
| K. James | 1602 Mar. 24 | 22 y 0 m 8 d |
| Charles 1 | 1625 Mar. 27 | 23 y 11 m 2 d |
| Charles 2 | 1648 Jan. 30 | <i>Vivat Rex.</i> |



A Table of Square

| Squar | root | Cubes. | Square | Root | Cubes. |
|-------|------|--------|--------|------|--------|
| 4 | 2 | 8 | 1024 | 32 | 32768 |
| 9 | 3 | 27 | 1084 | 33 | 35772 |
| 16 | 4 | 64 | 1156 | 34 | 39204 |
| 25 | 5 | 125 | 1225 | 35 | 42875 |
| 36 | 6 | 216 | 1296 | 36 | 46656 |
| 49 | 7 | 343 | 1369 | 37 | 50653 |
| 64 | 8 | 512 | 1444 | 38 | 54872 |
| 81 | 9 | 729 | 1521 | 39 | 59319 |
| 100 | 10 | 1000 | 1600 | 40 | 64000 |
| 121 | 11 | 1331 | 1681 | 41 | 68921 |
| 144 | 12 | 1728 | 1764 | 42 | 74088 |
| 169 | 13 | 2197 | 1849 | 43 | 81307 |
| 196 | 14 | 2744 | 1936 | 44 | 85184 |
| 225 | 15 | 3375 | 2025 | 45 | 87120 |
| 256 | 16 | 4096 | 2116 | 46 | 97336 |
| 289 | 17 | 513 | 2209 | 47 | 103823 |
| 324 | 18 | 5832 | 2304 | 48 | 110592 |
| 361 | 19 | 6859 | 2401 | 49 | 117649 |
| 400 | 20 | 8000 | 2500 | 50 | 125000 |
| 441 | 21 | 9261 | 2601 | 51 | 132651 |
| 484 | 22 | 10648 | 2704 | 52 | 140608 |
| 529 | 23 | 11197 | 2809 | 53 | 148877 |
| 576 | 24 | 13824 | 2916 | 54 | 156464 |
| 625 | 25 | 15625 | 3025 | 55 | 166375 |
| 676 | 26 | 17576 | 3136 | 56 | 175616 |
| 729 | 27 | 19683 | 3249 | 57 | 185193 |
| 784 | 28 | 21952 | 3364 | 58 | 195092 |
| 841 | 29 | 24389 | 3481 | 59 | 206179 |
| 900 | 30 | 27000 | 3600 | 60 | 216000 |
| 961 | 31 | 29791 | 3721 | 61 | 226981 |

and cubick Roots.

| Square | roo | Cubes. | Square | Ro. | Cubes. |
|--------|-----|--------|--------|-----|---------|
| 3844 | 62 | 238328 | 8464 | 92 | 778688 |
| 3969 | 63 | 250047 | 8649 | 93 | 804357 |
| 4096 | 64 | 262144 | 8836 | 94 | 830584 |
| 4225 | 65 | 274625 | 9025 | 95 | 857375 |
| 4356 | 66 | 287460 | 9216 | 96 | 884736 |
| 4489 | 67 | 300763 | 9409 | 97 | 912673 |
| 4624 | 68 | 314432 | 9604 | 98 | 941192 |
| 4761 | 69 | 328509 | 9801 | 99 | 961499 |
| 4900 | 70 | 352970 | 10000 | 100 | 1000000 |
| 5041 | 71 | 357911 | 10201 | 101 | 1030301 |
| 5184 | 72 | 373248 | 10404 | 102 | 1061208 |
| 5329 | 73 | 389017 | 10609 | 103 | 1092721 |
| 5476 | 74 | 389694 | 10816 | 104 | 1104864 |
| 5625 | 75 | 421875 | 11005 | 105 | 1155505 |
| 5776 | 76 | 443676 | 11206 | 106 | 1187806 |
| 5929 | 77 | 456533 | 11449 | 107 | 1225043 |
| 6084 | 78 | 413712 | 11664 | 108 | 1287702 |
| 6241 | 79 | 495039 | 11881 | 109 | 1205029 |
| 6400 | 80 | 512000 | 12100 | 110 | 1331000 |
| 6561 | 81 | 531431 | 12321 | 111 | 1367631 |
| 6724 | 82 | 551368 | 12544 | 112 | 1403924 |
| 6889 | 83 | 571787 | 12769 | 113 | 1442897 |
| 7056 | 84 | 592704 | 12996 | 114 | 1481544 |
| 7225 | 85 | 614125 | 13225 | 115 | 1520875 |
| 7276 | 86 | 625736 | 13456 | 116 | 1560896 |
| 7569 | 87 | 658503 | 13689 | 117 | 1501613 |
| 7747 | 88 | 681472 | 13924 | 118 | 1643032 |
| 8921 | 89 | 783968 | 14161 | 119 | 1685159 |
| 8100 | 90 | 729000 | 14400 | 120 | 1728000 |
| 8381 | 91 | 753571 | 14641 | 121 | 1771561 |

A Table for buying or selling any thing
by y Hundred, counting as to y
Hundred.

The Use of this Table may appear in this following example—

If one pound Cost 4 pence 3 farthings, what will the hundred cost? Look in y^e first Column for a pence 3 farthings, a pence under it and 3 far under y^e right against it in the seven Column you will find 2 pounds, 4 shilling, and 4 pence, and so much will 112 pound Cost.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|----|---|---|---|----|---|----|----|----|----|----|----|----|----|----|----|----|
| | 1 | 0 | . | 1 | . | 4 | . | 1 | . | 4 | . | 0 | . | 4 | . | 1 | . | 4 | . | 1 |
| | 2 | 0 | . | 4 | . | 8 | . | 2 | . | 4 | . | 8 | . | 2 | . | 4 | . | 8 | . | 2 |
| | 3 | 0 | . | 7 | . | 0 | . | 3 | . | 4 | . | 11 | . | 0 | . | 3 | . | 4 | . | 11 |
| 1 | 4 | 0 | . | 9 | . | 4 | . | 10 | . | 0 | . | 4 | . | 13 | . | 4 | . | 10 | . | 0 |
| | 1 | 0 | . | 11 | . | 8 | . | | . | 1 | . | 4 | . | 15 | . | 1 | . | 4 | . | 15 |
| | 2 | 0 | . | 14 | . | 0 | . | | . | 2 | . | 4 | . | 18 | . | 2 | . | 4 | . | 18 |
| | 3 | 0 | . | 16 | . | 4 | . | | . | 3 | . | 5 | . | 0 | . | 3 | . | 5 | . | 0 |
| 2 | 0 | 0 | . | 18 | . | 8 | . | 11 | . | 0 | . | 5 | . | 2 | . | 0 | . | 5 | . | 2 |
| | 1 | 1 | . | 1 | . | 0 | . | | . | 1 | . | 5 | . | 5 | . | 1 | . | 5 | . | 5 |
| | 2 | 1 | . | 3 | . | 4 | . | | . | 2 | . | 5 | . | 7 | . | 2 | . | 5 | . | 7 |
| | 3 | 1 | . | 5 | . | 8 | . | | . | 3 | . | 5 | . | 9 | . | 3 | . | 5 | . | 9 |
| 3 | 0 | 1 | . | 8 | . | 0 | . | 12 | . | 0 | . | 5 | . | 12 | . | 0 | . | 5 | . | 12 |
| | 1 | 1 | . | 10 | . | 4 | . | | . | 1 | . | 5 | . | 14 | . | 1 | . | 5 | . | 14 |
| | 2 | 1 | . | 12 | . | 8 | . | | . | 2 | . | 5 | . | 16 | . | 2 | . | 5 | . | 16 |
| | 3 | 1 | . | 15 | . | 0 | . | | . | 3 | . | 5 | . | 19 | . | 3 | . | 5 | . | 19 |
| 4 | 0 | 1 | . | 17 | . | 4 | . | 15 | . | 0 | . | 6 | . | 1 | . | 0 | . | 6 | . | 1 |
| | 1 | 1 | . | 19 | . | 8 | . | | . | 1 | . | 6 | . | 3 | . | 1 | . | 6 | . | 3 |
| | 2 | 2 | . | 2 | . | 0 | . | | . | 2 | . | 6 | . | 6 | . | 2 | . | 6 | . | 6 |
| | 3 | 2 | . | 4 | . | 4 | . | | . | 3 | . | 6 | . | 8 | . | 3 | . | 6 | . | 8 |
| 5 | 0 | 2 | . | 6 | . | 8 | . | 14 | . | 0 | . | 6 | . | 10 | . | 0 | . | 6 | . | 10 |
| | 1 | 2 | . | 9 | . | 0 | . | | . | 1 | . | 6 | . | 13 | . | 1 | . | 6 | . | 13 |
| | 2 | 2 | . | 11 | . | 4 | . | | . | 2 | . | 6 | . | 15 | . | 2 | . | 6 | . | 15 |
| | 3 | 2 | . | 13 | . | 8 | . | | . | 3 | . | 6 | . | 17 | . | 3 | . | 6 | . | 17 |
| 6 | 0 | 2 | . | 16 | . | 0 | . | 15 | . | 0 | . | 7 | . | 0 | . | 0 | . | 7 | . | 0 |
| | 1 | 2 | . | 18 | . | 4 | . | | . | 1 | . | 7 | . | 2 | . | 1 | . | 7 | . | 2 |
| | 2 | 3 | . | 0 | . | 8 | . | | . | 2 | . | 7 | . | 4 | . | 2 | . | 7 | . | 4 |
| | 3 | 3 | . | 3 | . | 0 | . | | . | 3 | . | 7 | . | 7 | . | 3 | . | 7 | . | 7 |
| 7 | 0 | 3 | . | 5 | . | 4 | . | 16 | . | 0 | . | 7 | . | 9 | . | 0 | . | 7 | . | 9 |
| | 1 | 3 | . | 7 | . | 8 | . | | . | 1 | . | 7 | . | 11 | . | 1 | . | 7 | . | 11 |
| | 2 | 3 | . | 10 | . | 0 | . | | . | 2 | . | 7 | . | 14 | . | 2 | . | 7 | . | 14 |
| | 3 | 3 | . | 12 | . | 4 | . | | . | 3 | . | 7 | . | 16 | . | 3 | . | 7 | . | 16 |
| 8 | 0 | 3 | . | 14 | . | 8 | . | 17 | . | 0 | . | 7 | . | 18 | . | 0 | . | 7 | . | 18 |
| | 1 | 3 | . | 17 | . | 0 | . | | . | 1 | . | 8 | . | 1 | . | 1 | . | 8 | . | 1 |
| | 2 | 3 | . | 19 | . | 4 | . | | . | 2 | . | 8 | . | 3 | . | 2 | . | 8 | . | 3 |
| | 3 | 4 | . | 1 | . | 8 | . | | . | 3 | . | 8 | . | 5 | . | 3 | . | 8 | . | 5 |
| 9 | 0 | 4 | . | 4 | . | 0 | . | 18 | . | 0 | . | 8 | . | 0 | . | 0 | . | 8 | . | 0 |

A Table for $\frac{6}{y}$ Purchases at 5^l 6^l
8^l and 10^l Per Cent.
Compound interest,

| | at 5 pr
Cent | at 6 pr
Cent | at 8 pr
Cent | at 10 pr
Cent | The Use of the
Table |
|-----|-----------------|-----------------|-----------------|------------------|---|
| Y | MY | MY | MY | M | |
| 1 | 0 | 11.0 | 11.0 | 11.0 | 11 Look in the first Column |
| 2 | 1 | 10.1 | 10.1 | 9.1 | 9 for 51 years, and right |
| 3 | 2 | 9.2 | 8.2 | 7.2 | 6 against it under 5 per |
| 4 | 3 | 7.3 | 6.3 | 4.3 | 2 Cent, you shall find 18 3. |
| 5 | 4 | 4.4 | 3.4 | 0.3 | 9 Which shews the Lease is |
| 6 | 5 | 1.4 | 11.4 | 7.4 | 4 worth 18 years purchase, |
| 7 | 5 | 9.5 | 7.5 | 2.4 | 11 and 3 months which is a |
| 8 | 6 | 0.6 | 2.5 | 9.5 | 4 quarter of a year. |
| 9 | 7 | 1.6 | 10.6 | 8.5 | 9 So that if the Rent were |
| 10 | 7 | 9.7 | 4.6 | 9.6 | 2 a year then is times 18 |
| 11 | 8 | 4.7 | 11.7 | 2.6 | 6 is 18 ^l and the quarter |
| 12 | 9 | 5.8 | 10.7 | 11.7 | 1 of the year is 21 ^l 10 ^l in |
| 13 | 10 | 5.9 | 9.8 | 7.7 | 7 all 18 ^l 10 ^l and so much |
| 14 | 11 | 5.10 | 6.9 | 1.8 | 0 is the Lease worth in |
| 15 | 12 | 1.11 | 2.9 | 7.8 | 4 ready Money, at 5 |
| 16 | 13 | 10.11 | 0.10 | 0.8 | 11 per cent. — But if |
| 17 | 13 | 6.12 | 4.10 | 4.9 | 1 the purchaser would |
| 18 | 14 | 1.12 | 0.10 | 0.9 | 2 have 6 ^l 8 ^l or 10 ^l |
| 19 | 14 | 2.13 | 5.10 | 11.0 | 3 profit for his |
| 20 | 15 | 2.13 | 7.11 | 2.0 | 4 Money, then |
| 21 | 15 | 7.13 | 11.11 | 4.0 | 6 } profit for his 3 y n |
| 22 | 17 | 1.15 | 1.11 | 11.0 | 9 } Money, the 15-0 |
| 23 | 18 | 3.16 | 0.12 | 3.0 | 10 } Lease is 12-3 |
| 24 | 18 | 11.16 | 2.12 | 4.10 | 11 } worth 9-11 |
| 25 | 19 | 4.16 | 5.12 | 5.10 | 0 } l. s d |
| 26 | 19 | 7.16 | 6.12 | 6.10 | 0 } purchase 157-10-0 |
| 27 | 19 | 9.16 | 7.12 | 6.10 | 0 } which 122-10-0 |
| 28 | 20 | 0.16 | 8.12 | 6.10 | 0 } comes to but 99-3-0 |
| Fee | | | | | |

A Table for buying or selling any thing
by y Hundred, counting uz to y
Hundred.

The Use of this Table may appear in this following Example—

If one pound Cost 4 pence 3 farthings, what will the hundred cost? Look in the first Column for 4 pence 3 farthings 3 pence under it and 3 far under 4 & right against it in the second Column you will find 2 pounds, 4 shilling, and 4 pence, and for much will it a pound Cost.

| 7. | 2. | S. | 2. | 4. | 7. | 3. | 1. |
|----|----|----|----|----|----|----|----|
| 1 | 1 | 0 | 1 | 4 | 1 | 4 | 0 |
| | 2 | 0 | 4 | 8 | 2 | 4 | 8 |
| | 3 | 0 | 7 | 0 | 3 | 4 | 11 |
| 1 | 4 | 0 | 9 | 4 | 10 | 0 | 4 |
| | 1 | 0 | 11 | 8 | 1 | 4 | 15 |
| | 2 | 0 | 14 | 0 | 2 | 4 | 18 |
| | 3 | 0 | 16 | 4 | 3 | 5 | 0 |
| 2 | 0 | 0 | 18 | 8 | 11 | 0 | 5 |
| | 1 | 1 | 1 | 0 | 1 | 5 | 5 |
| | 2 | 1 | 3 | 4 | 2 | 5 | 7 |
| | 3 | 1 | 5 | 8 | 3 | 5 | 9 |
| 3 | 0 | 1 | 8 | 0 | 12 | 0 | 5 |
| | 1 | 1 | 10 | 4 | 1 | 5 | 14 |
| | 2 | 1 | 12 | 8 | 2 | 5 | 16 |
| | 3 | 1 | 15 | 0 | 3 | 5 | 19 |
| 4 | 0 | 1 | 17 | 4 | 13 | 0 | 6 |
| | 1 | 1 | 19 | 8 | 1 | 6 | 3 |
| | 2 | 2 | 2 | 0 | 2 | 6 | 6 |
| | 3 | 2 | 4 | 4 | 3 | 6 | 8 |
| 5 | 0 | 2 | 6 | 8 | 14 | 0 | 6 |
| | 1 | 3 | 9 | 0 | 1 | 6 | 13 |
| | 2 | 3 | 11 | 4 | 2 | 6 | 15 |
| | 3 | 3 | 13 | 8 | 3 | 6 | 17 |
| 6 | 0 | 3 | 16 | 0 | 15 | 0 | 7 |
| | 1 | 4 | 18 | 4 | 1 | 7 | 2 |
| | 2 | 4 | 0 | 8 | 2 | 7 | 4 |
| | 3 | 4 | 3 | 0 | 3 | 7 | 7 |
| 7 | 0 | 4 | 5 | 4 | 16 | 0 | 7 |
| | 1 | 5 | 7 | 8 | 1 | 7 | 11 |
| | 2 | 5 | 10 | 0 | 2 | 7 | 14 |
| | 3 | 5 | 13 | 4 | 3 | 7 | 16 |
| 8 | 0 | 5 | 14 | 8 | 17 | 0 | 7 |
| | 1 | 6 | 17 | 0 | 1 | 8 | 1 |
| | 2 | 6 | 19 | 4 | 2 | 8 | 3 |
| | 3 | 6 | 1 | 8 | 3 | 8 | 5 |
| 9 | 0 | 6 | 4 | 0 | 18 | 0 | 0 |

A Table for $\frac{1}{2}$ Purchases at 5^l 6^l
8^l and 10^l Per Cent.
Compound interest,

| | at 5 pr
Cent | at 6 pr
Cent | at 8 pr
Cent | at 10 pr
Cent | The Use of the
Table |
|-----|-----------------|-----------------|-----------------|------------------|-------------------------|
| | Y | MY | MY | MY | M |
| 1 | 0 | 11 0 | 11 0 | 11 0 | 11 |
| 2 | 1 | 10 1 | 10 1 | 9 1 | 9 |
| 3 | 2 | 9 2 | 8 2 | 7 2 | 6 |
| 4 | 3 | 7 3 | 6 3 | 4 3 | 2 |
| 5 | 4 | 4 4 | 3 4 | 0 3 | 9 |
| 6 | 5 | 1 4 | 11 4 | 7 4 | 4 |
| 7 | 5 | 9 5 | 7 5 | 2 4 | 11 |
| 8 | 6 | 6 6 | 2 5 | 9 5 | 4 |
| 9 | 7 | 1 6 | 10 6 | 8 5 | 9 |
| 10 | 7 | 9 7 | 4 6 | 9 6 | 2 |
| 11 | 8 | 4 7 | 11 7 | 2 6 | 6 |
| 12 | 9 | 5 8 | 10 7 | 11 7 | 1 |
| 13 | 10 | 5 9 | 9 8 | 7 7 | 7 |
| 14 | 11 | 5 10 | 6 9 | 1 8 | 0 |
| 15 | 12 | 1 11 | 2 9 | 7 8 | 4 |
| 16 | 13 | 10 11 | 9 10 | 0 8 | 11 |
| 17 | 13 | 6 12 | 4 10 | 4 9 | 1 |
| 18 | 14 | 1 12 | 9 10 | 8 9 | 2 |
| 19 | 14 | 2 13 | 5 10 | 11 0 | 3 |
| 20 | 15 | 2 13 | 7 11 | 2 0 | 4 |
| 21 | 15 | 7 13 | 11 11 | 4 0 | 6 |
| 22 | 17 | 1 15 | 1 11 | 11 0 | 9 |
| 23 | 18 | 3 16 | 0 12 | 3 0 | 10 |
| 24 | 18 | 11 16 | 2 12 | 4 10 | 11 |
| 25 | 19 | 4 16 | 5 12 | 5 10 | 0 |
| 26 | 19 | 7 16 | 6 12 | 6 10 | 0 |
| 27 | 19 | 9 16 | 7 12 | 6 10 | 0 |
| 28 | 20 | 0 16 | 8 12 | 6 10 | 0 |
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| 100 | | | | | |

the Number of yeares to be Purchased

the Value of the Purchase in

the Value of the Purchase in

the Value of the Purchase in

Look in the first Column
for 51 years, and right
against it under 5 per
Cent, you shall find 18 3.
Which shews the Lease is
worth 18 years purchase
and 3 months which is a
quarter of a year.
So that if the Rent were
12^l a year then is times 18
6 is 180^l and the quarter
of the year is 21^l 10^s in
all 182 10^s and so much
is the Lease worth in
ready Money at 5
per cent. — But if
the purchaser would
have 6^l 8^l or 10^l
profit for his
Money then
{ profit for his Money the Lease is worth }
{ 6 } { 15-0 }
{ 8 } { 12-3 }
{ 10 } { 9-11 }
{ purchase which comes out }
{ 157-10-0 }
{ 132-10-0 }
{ 25-0-0 }

See

A Table of Gunnery.

| | Gun's
length. | Gun's
weight. | Gun's
bore. | Gun's
diameter. | Bullets
weight. | Bullets
length. | Ladles
breadth. | Ladles
length. | Rebeck's
weight. |
|--|------------------|------------------|----------------|--------------------|--------------------|--------------------|--------------------|-------------------|---------------------|
| The Names
of the sever-
all Pieces of
Ordnance. | Feet. | pounds. | Inches. | 8 parts. | 8 parts. | Ounces. | 8 parts. | 8 parts. | Ounces. |
| A Baze. | 4.6 | 200 | 1.2 | 1.1 | 0.5 | 4.0 | 2.0 | 0.8 | |
| A Rabinet. | 5.6 | 300 | 1.4 | 1.3 | 0.8 | 4.1 | 2.4 | 0.12 | |
| A Falconet. | 6.0 | 400 | 2.2 | 2.2 | 1.5 | 7.4 | 4.0 | 1.4 | |
| A Falcon. | 7.0 | 750 | 2.6 | 2.5 | 2.8 | 8.2 | 4.4 | 2.4 | |
| Munition ord. | 7.0 | 800 | 3.0 | 2.7 | 3.4 | 8.4 | 5.0 | 2.8 | |
| Munition larg. | 8.0 | 1000 | 3.2 | 3.0 | 3.12 | 9.0 | 5.0 | 3.4 | |
| Saker least | 8.0 | 1400 | 3.4 | 3.2 | 4.12 | 9.6 | 6.4 | 3.6 | |
| Saker ord. | 9.0 | 1500 | 3.6 | 3.4 | 6.0 | 10.4 | 6.6 | 4.0 | |
| Saker old. | 10.0 | 1800 | 4.0 | 3.6 | 7.5 | 11.0 | 7.2 | 5.0 | |
| Demicul lea | 10.0 | 2000 | 4.2 | 4.0 | 9.0 | 12.0 | 8.0 | 6.4 | |
| Demicu: ord. | 11.0 | 2700 | 4.4 | 4.2 | 10.11 | 12.6 | 8.0 | 7.4 | |
| Demic: old. | 11.0 | 3000 | 4.6 | 4.4 | 12.11 | 13.4 | 8.4 | 8.8 | |
| Culver: least. | 11.0 | 4000 | 5.0 | 4.6 | 15.0 | 14.2 | 9.0 | 10.0 | |
| Culverm ord. | 12.0 | 4500 | 5.2 | 5.0 | 17.5 | 16.0 | 9.4 | 11.6 | |
| Culver: larg. | 12.0 | 4800 | 5.4 | 5.2 | 20.0 | 16.0 | 10.0 | 11.8 | |
| Demican: le. | 11.0 | 5400 | 6.2 | 6.0 | 30.0 | 20.0 | 11.4 | 14.0 | |
| Demican: or | 12.0 | 5600 | 6.4 | 6.1 | 32.0 | 22.0 | 12.0 | 17.8 | |
| Demican: lar | 12.0 | 6000 | 6.6 | 6.3 | 36.0 | 22.6 | 12.0 | 18.0 | |
| Cannon Roy. | 12.0 | 8000 | 8.0 | 7.4 | 58.0 | 24.0 | 14.6 | 32.8 | |

A Table shewing the height and weight of Iron, Lead, and Ston Shot, in our English weight and measure of pounds & Ounces, Feet, paces, and Inches and parts.

| Height
Feet
Inches
Parts | Quarters | Iron
pou | Ounces | Lead
pou | Ounces | Stone
po | Ounces | Height
Inches | Quarters | Iron
pou | Ounces | Lead
po | Ounces | Stone
po | Ounces |
|-----------------------------------|----------|-------------|----------|-------------|---------|-------------|--------|------------------|----------|-------------|--------|------------|--------|-------------|--------|
| 1 0 | 1 0 | 0 0 | 3 0 | 1 1/2 | 6 0 | 30 0 | 45 0 | 11 4 | 1 1 | 1 0 | 0 0 | 6 0 | 3 0 | 1 1/2 | 6 0 |
| 1 1 | 1 1 | 0 0 | 6 0 | 3 0 | 6 0 | 3 0 | 51 0 | 12 12 | 1 2 | 1 0 | 0 0 | 9 0 | 4 1/2 | 6 0 | 3 0 |
| 1 2 | 1 2 | 0 0 | 9 0 | 4 1/2 | 6 0 | 3 0 | 63 0 | 15 12 | 1 3 | 1 0 | 0 0 | 12 0 | 5 3/4 | 6 0 | 3 0 |
| 1 3 | 1 3 | 0 0 | 12 0 | 5 3/4 | 6 0 | 3 0 | 75 0 | 18 0 | 1 4 | 1 0 | 0 0 | 15 0 | 6 3/4 | 6 0 | 3 0 |
| 2 0 | 2 0 | 1 1 | 11 0 | 7 0 | 7 0 | 1 53 0 | 79 8 | 19 14 | 2 1 | 2 0 | 0 0 | 9 0 | 8 0 | 2 1 | 12 0 |
| 2 1 | 2 1 | 1 1 | 9 0 | 9 0 | 7 0 | 3 64 0 | 96 0 | 24 0 | 2 2 | 2 0 | 0 0 | 12 0 | 9 0 | 2 4 | 0 0 |
| 2 2 | 2 2 | 2 2 | 3 0 | 12 0 | 8 0 | 7 2 10 | 106 8 | 26 12 | 2 3 | 2 0 | 0 0 | 15 0 | 10 0 | 2 8 | 0 0 |
| 2 3 | 2 3 | 2 2 | 14 4 | 3 1 0 | 8 0 | 1 78 0 | 117 0 | 28 8 | 3 0 | 3 0 | 12 5 0 | 130 8 | 32 8 | 3 5 | 10 0 |
| 3 0 | 3 0 | 3 1 | 12 6 | 9 1 8 | 9 0 | 10 1 0 | 150 0 | 37 10 | 3 1 | 3 0 | 13 8 0 | 142 8 | 35 10 | 4 0 | 0 0 |
| 3 1 | 3 1 | 4 1 | 8 1 2 | 9 9 7 | 9 0 | 10 9 6 | 161 8 | 40 4 | 3 2 | 3 0 | 14 1 0 | 152 8 | 38 10 | 4 4 | 0 0 |
| 3 2 | 3 2 | 5 1 | 14 2 7 | 9 9 7 | 9 0 | 11 2 10 | 181 13 | 44 2 | 3 3 | 3 0 | 15 1 0 | 163 8 | 41 10 | 4 8 | 0 0 |
| 4 0 | 4 0 | 8 1 | 15 11 5 | 13 9 3 | 13 2 11 | 19 8 5 | 198 5 | 49 8 | 4 0 | 4 0 | 16 4 2 | 174 8 | 44 10 | 5 0 | 0 0 |
| 4 1 | 4 1 | 10 1 | 15 15 3 | 10 19 2 | 13 8 0 | 20 7 0 | 207 0 | 51 10 | 4 1 | 4 0 | 17 4 2 | 186 8 | 47 10 | 5 4 | 0 0 |
| 4 2 | 4 2 | 12 1 | 16 4 3 | 11 0 11 | 14 0 18 | 21 5 0 | 215 0 | 53 8 | 4 3 | 4 0 | 18 4 2 | 198 8 | 50 10 | 5 8 | 0 0 |
| 4 3 | 4 3 | 14 1 | 15 5 9 | 11 2 11 | 15 0 21 | 22 0 3 | 224 0 | 56 0 | 5 0 | 5 0 | 19 4 2 | 210 8 | 53 10 | 6 0 | 0 0 |
| 5 0 | 5 0 | 17 1 | 12 6 3 | 12 12 0 | 16 0 12 | 23 0 0 | 230 0 | 59 0 | 5 1 | 5 0 | 20 4 2 | 222 8 | 56 10 | 6 4 | 0 0 |
| 5 1 | 5 1 | 20 1 | 10 7 8 | 13 13 0 | 17 0 13 | 24 0 0 | 240 0 | 62 0 | 5 2 | 5 0 | 21 4 2 | 234 8 | 59 10 | 6 8 | 0 0 |
| 5 2 | 5 2 | 23 2 | 10 8 14 | 14 14 0 | 18 0 14 | 25 0 0 | 250 0 | 65 0 | 5 3 | 5 0 | 22 4 2 | 246 8 | 62 10 | 7 0 | 0 0 |
| 5 3 | 5 3 | 26 2 | 10 10 14 | 15 15 0 | 19 0 15 | 26 0 0 | 260 0 | 68 0 | 5 4 | 5 0 | 23 4 2 | 258 8 | 65 10 | 7 4 | 0 0 |

~~Mr~~ Mr Edward Colemans Characters
with his Key to Write and Read
them by.

None

The Key.

| | | |
|-----|-----|-----|
| AKT | BLV | CMW |
|-----|-----|-----|

| | | |
|-----|-------|-----|
| DNX | E O Y | FPZ |
|-----|-------|-----|

DNXEOYFPZ

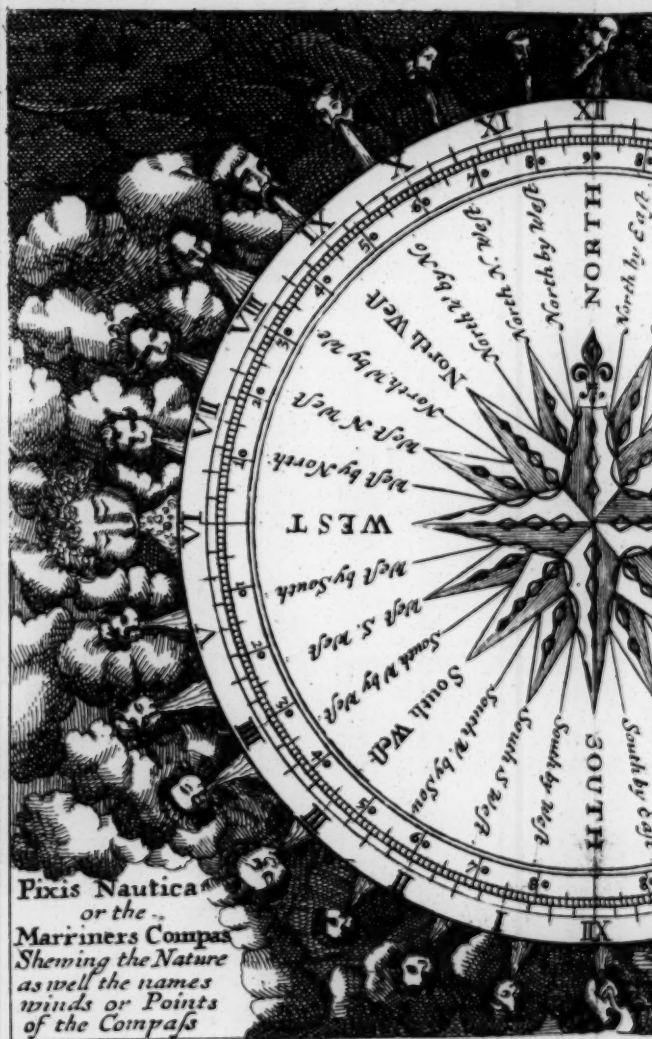
| | | |
|----|----|----|
| GQ | HR | IS |
|----|----|----|

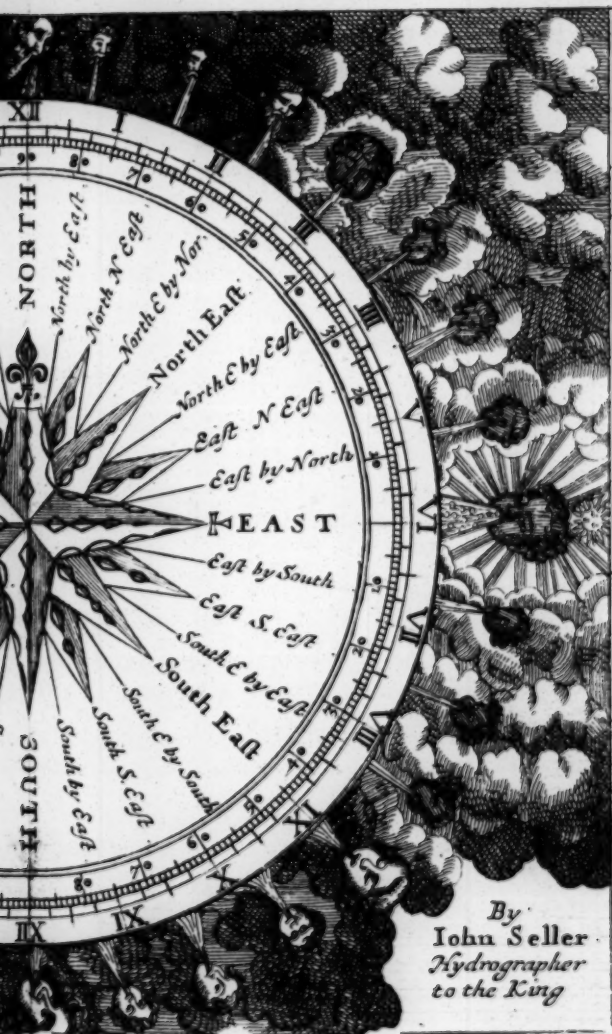
┐┐┐┐┐┐┐┐┐┐┐┐┐┐┐┐
A B C D E F G H I K L M N O P

┐┐┐┐┐┐┐┐┐┐┐┐┐┐┐┐
Q R S T V W X Y Z

┐┐┐┐┐┐┐┐┐┐┐┐┐┐┐┐
God Save the King





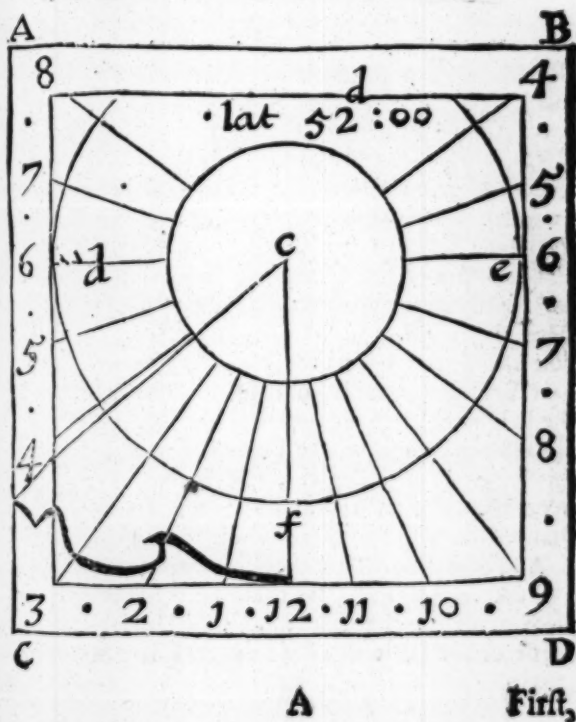


By
John Seller
Hydrographer
to the King



Tabular Dialling.

The Use of these following Tables, for the Delineating any Horizontal or Vertical Dial for any Latitude whatsoever; performed by the help of a Line of Chords. Their Use will appear in this following Example.



First, Draw the Square and Frame of the Dial, with the Margent for the Hours, as you may see in the foregoing Figure, exprest by the Letters A, B, C, D. Then upon the Center C, describe the Arch *d, e, f*, with 60 Degrees or Radius of a Line of Chords; then draw the Line *cf* for the hour of 12, and the Line *de* at right Angles, with the Line *cf* through the Center C, which will be the hours of 6 and 6 both for Morning and Evening. Then supposing the Dial to be drawn for the Latitude of 52 degrees, and having recourse to the Tables for that Latitude, take out the Angles there exprest for each quarter, half hour, and hour, and place them from *f* toward *d* and *e* on both ways; and if you make your Dial to every quarter of an hour, then for the first quarter, take out of the Line of Chords 2 deg. 56 min. which distance place from *f* towards *d* and *e* both ways; for the half hour 5 deg. 55 min. for the three quarters, 8 deg. 54 min. for the whole hour, 11 deg. 55 min. which must be placed on both sides of the Meridian, that is, from *f* to *d* and *e* both ways, as before. Then draw the Hour Lines from the Center C to each respective Point; that you have set off upon the Circle *d e f*, and when you have figured it, then is your Dial finished. And for the height of the Stile for the Horizontal Dial, it is always the Angle of the Poles Elevation, which in this Example is 52 degrees; which must be set right over the hour of 12, and at right Angles with the Plane.

And here note, That every Horizontal Dial is also a direct South Dial, in that place that is the Complement of the Latitude: as this Horizontal Dial made for the Latitude of 52 degrees, is a South Dial
in

in the Latitude of 38 degrees ; and the height of the Stile for the South Dial, is always the Complement of the Latitude of the place for which the Dial is made. And in the South Dials, you must leave out the hours before and after 6.

They are also North or South Incliners and Recliners, (and that in all Latitudes) and to every degree of Inclination or Reclination.

The Proportion for making these Tables is,

As the Sine of 90 Degrees

Is to the Sine of the Latitude :

So is the Tangent of the Hour from the proper Merid.
To the Tangent of the Hour from the Substile.

See one Example for the hours of 1 and 11 in the afore-mentioned Horizontal Dial for 52 degrees.

As the Sine of 90

Is to the Sine of 52 deg.

So is the Tangent of 15 deg.

10,

9,8965321

9,4180525

To the Tangent of 11 deg. 55 min.

119,3245846

The distances of the hours, of 1 and 11, as you may see in the Tables, by which proportion these Tables were calculated, and by which any of them may be proved.

A Table for the Horizontal Dial, Latit. 51 d. 32 m.

| <u>H.</u> | <u>D.</u> <u>M.</u> | <u>H.</u> |
|-----------|---------------------|-----------|
| | 02 57 | |
| | 05 53 | |
| | 08 51 | |
| <u>1</u> | <u>11 51</u> | <u>11</u> |
| | 14 53 | |
| | 17 58 | |
| | 21 06 | |
| <u>2</u> | <u>24 19</u> | <u>10</u> |
| | 27 36 | |
| | 31 00 | |
| | 34 28 | |
| <u>3</u> | <u>38 03</u> | <u>9</u> |
| | 41 45 | |
| | 45 34 | |
| | 49 32 | |
| <u>4</u> | <u>53 36</u> | <u>8</u> |
| | 57 47 | |
| | 62 07 | |
| | 66 33 | |
| <u>5</u> | <u>71 06</u> | <u>7</u> |
| | 75 44 | |
| | 80 27 | |
| | 85 13 | |
| <u>6</u> | <u>90 00</u> | <u>6</u> |

| | 1 | 2 | 3 | 4 | 5 | |
|----|-------|-------|-------|-------|-------|----|
| H. | D. M. | H. M. | D. M. | D. M. | D. M. | H. |
| | 0 4 | 0 8 | 0 11 | 0 15 | 0 19 | |
| | 0 8 | 0 16 | 0 23 | 0 32 | 0 39 | |
| | 0 12 | 0 21 | 0 36 | 0 48 | 0 59 | |
| 1 | 0 16 | 0 32 | 0 48 | 1 04 | 1 20 | 11 |
| | 0 20 | 0 41 | 1 01 | 1 21 | 1 42 | |
| | 0 25 | 0 50 | 1 14 | 1 39 | 2 04 | |
| | 0 29 | 1 59 | 1 29 | 1 58 | 2 27 | |
| 2 | 0 35 | 1 09 | 1 44 | 2 18 | 2 53 | 10 |
| | 0 40 | 1 20 | 2 00 | 2 40 | 3 19 | |
| | 0 45 | 1 32 | 2 18 | 3 03 | 3 49 | |
| | 0 52 | 1 45 | 2 38 | 3 30 | 4 22 | |
| 3 | 1 00 | 2 00 | 2 59 | 3 59 | 4 59 | 9 |
| | 1 08 | 2 16 | 3 25 | 4 33 | 5 41 | |
| | 1 18 | 2 36 | 3 54 | 5 11 | 6 29 | |
| | 1 30 | 2 59 | 4 28 | 5 57 | 7 26 | |
| 4 | 1 44 | 3 27 | 5 10 | 6 53 | 8 35 | 8 |
| | 2 01 | 4 02 | 6 03 | 8 03 | 10 01 | |
| | 2 24 | 4 48 | 7 11 | 9 32 | 11 52 | |
| | 2 57 | 5 52 | 8 45 | 11 36 | 14 24 | |
| 5 | 3 43 | 7 24 | 11 01 | 14 33 | 17 59 | 7 |
| | 5 00 | 9 56 | 14 43 | 19 18 | 23 38 | |
| | 7 32 | 14 50 | 21 38 | 27 52 | 33 30 | |
| | 14 53 | 27 58 | 38 32 | 46 43 | 53 01 | |
| 6 | 90 00 | 90 00 | 90 00 | 90 00 | 90 00 | 6 |

| | 6 | 7 | 8 | 9 | 10 | |
|----|-------|-------|-------|-------|-------|----|
| H. | D. M. | D. M. | D. M. | D. M. | D. M. | H. |
| | 0 23 | 0 28 | 0 31 | 0 35 | 0 39 | |
| | 0 47 | 0 55 | 1 03 | 1 11 | 1 18 | |
| | 1 11 | 1 23 | 1 35 | 1 47 | 1 59 | |
| 1 | 1 36 | 1 52 | 2 08 | 2 24 | 2 40 | 11 |
| | 2 02 | 2 22 | 2 42 | 3 02 | 3 22 | |
| | 2 29 | 2 49 | 3 16 | 3 42 | 4 06 | |
| | 2 57 | 3 26 | 3 55 | 4 24 | 4 53 | |
| | 3 27 | 4 01 | 4 35 | 5 10 | 5 43 | 10 |
| 2 | 3 59 | 4 38 | 5 18 | 5 58 | 6 36 | |
| | 4 35 | 5 19 | 6 05 | 6 50 | 7 34 | |
| | 5 14 | 6 05 | 6 57 | 7 48 | 8 38 | |
| 3 | 5 58 | 6 57 | 7 55 | 8 54 | 9 51 | 9 |
| | 6 48 | 7 54 | 9 01 | 10 07 | 11 11 | |
| | 7 46 | 9 01 | 10 17 | 11 31 | 12 44 | |
| | 8 50 | 10 20 | 12 45 | 13 11 | 14 33 | |
| 4 | 10 10 | 11 54 | 13 32 | 15 08 | 16 42 | 8 |
| | 11 58 | 13 52 | 15 46 | 17 36 | 19 23 | |
| | 14 08 | 16 21 | 18 32 | 20 39 | 22 41 | |
| | 17 06 | 19 43 | 22 16 | 24 43 | 26 54 | |
| 5 | 21 16 | 24 22 | 27 22 | 30 13 | 32 54 | 7 |
| | 27 42 | 31 26 | 34 56 | 38 09 | 40 40 | |
| | 38 24 | 42 42 | 46 31 | 49 52 | 52 46 | |
| | 57 53 | 61 40 | 64 44 | 67 14 | 69 17 | |
| 6 | 90 00 | 90 00 | 90 00 | 90 00 | 90 00 | 6 |

H.

II

IO

9

8

7

6

| H. | II | | I2 | | I3 | | I4 | | I5 | | H. |
|----|----|----|----|----|----|----|----|----|----|----|----|
| | D. | M. | D. | M. | D. | M. | D. | M. | D. | M. | |
| | 0 | 43 | 0 | 47 | 0 | 50 | 0 | 54 | 0 | 58 | |
| | 1 | 26 | 1 | 34 | 1 | 42 | 1 | 49 | 1 | 57 | |
| | 2 | 10 | 2 | 22 | 2 | 34 | 2 | 45 | 2 | 57 | |
| I | 2 | 55 | 3 | 11 | 3 | 27 | 3 | 42 | 3 | 58 | II |
| | 3 | 42 | 4 | 02 | 4 | 22 | 4 | 41 | 5 | 01 | |
| | 4 | 31 | 4 | 55 | 5 | 20 | 5 | 45 | 6 | 06 | |
| | 5 | 22 | 5 | 50 | 6 | 19 | 6 | 47 | 7 | 15 | |
| 2 | 6 | 17 | 6 | 50 | 7 | 24 | 7 | 56 | 8 | 29 | IO |
| | 7 | 15 | 7 | 43 | 8 | 32 | 9 | 09 | 9 | 47 | |
| | 8 | 19 | 9 | 02 | 9 | 47 | 10 | 29 | 11 | 11 | |
| | 9 | 28 | 10 | 18 | 11 | 08 | 11 | 57 | 12 | 45 | |
| 3 | 10 | 48 | 11 | 44 | 12 | 41 | 13 | 35 | 14 | 30 | 9 |
| | 12 | 16 | 13 | 19 | 14 | 24 | 15 | 24 | 16 | 25 | |
| | 13 | 57 | 15 | 08 | 16 | 21 | 17 | 30 | 18 | 38 | |
| | 15 | 56 | 17 | 16 | 18 | 38 | 19 | 54 | 21 | 08 | |
| 4 | 18 | 16 | 19 | 46 | 21 | 16 | 22 | 43 | 24 | 06 | 8 |
| | 21 | 08 | 22 | 50 | 24 | 31 | 26 | 06 | 27 | 39 | |
| | 24 | 42 | 26 | 34 | 28 | 28 | 30 | 13 | 31 | 54 | |
| | 29 | 18 | 31 | 27 | 33 | 31 | 35 | 26 | 37 | 15 | |
| 5 | 35 | 22 | 37 | 42 | 39 | 57 | 41 | 59 | 43 | 53 | 7 |
| | 43 | 45 | 46 | 12 | 48 | 30 | 50 | 31 | 52 | 23 | |
| | 55 | 20 | 57 | 35 | 59 | 38 | 61 | 23 | 62 | 58 | |
| | 71 | 00 | 72 | 28 | 73 | 46 | 74 | 49 | 75 | 45 | |
| 6 | 90 | 00 | 90 | 00 | 90 | 00 | 90 | 00 | 90 | 00 | 6 |

| | 16 | | 17 | | 18 | | 19 | | 20 | | |
|----|----|----|----|----|----|----|----|----|----|----|----|
| H. | D. | M. | D. | M. | D. | M. | D. | M. | D. | M. | H. |
| | 1 | 1 | 1 | 06 | 1 | 09 | 1 | 13 | 1 | 16 | |
| | 2 | 4 | 2 | 12 | 2 | 19 | 2 | 27 | 2 | 34 | |
| | 3 | 8 | 3 | 19 | 3 | 31 | 3 | 42 | 3 | 53 | |
| 1 | 4 | 13 | 4 | 28 | 4 | 43 | 4 | 59 | 5 | 14 | 11 |
| | 5 | 20 | 5 | 39 | 5 | 58 | 6 | 18 | 6 | 37 | |
| | 6 | 31 | 6 | 54 | 7 | 17 | 7 | 40 | 8 | 04 | |
| | 7 | 44 | 8 | 11 | 8 | 38 | 9 | 06 | 9 | 34 | |
| 2 | 9 | 02 | 9 | 34 | 10 | 06 | 10 | 38 | 11 | 10 | 10 |
| | 10 | 25 | 11 | 01 | 11 | 34 | 12 | 11 | 12 | 51 | |
| | 11 | 55 | 12 | 36 | 13 | 17 | 13 | 59 | 14 | 41 | |
| | 13 | 33 | 14 | 20 | 15 | 06 | 15 | 54 | 16 | 40 | |
| 3 | 15 | 24 | 16 | 16 | 17 | 09 | 18 | 01 | 18 | 53 | 9 |
| | 17 | 27 | 18 | 26 | 19 | 24 | 20 | 22 | 21 | 19 | |
| | 19 | 46 | 20 | 50 | 21 | 54 | 22 | 58 | 24 | 02 | |
| | 22 | 25 | 23 | 36 | 24 | 46 | 25 | 59 | 27 | 07 | |
| 4 | 25 | 30 | 26 | 50 | 23 | 06 | 29 | 22 | 30 | 38 | 8 |
| | 29 | 11 | 30 | 37 | 32 | 01 | 33 | 24 | 34 | 45 | |
| | 33 | 35 | 35 | 07 | 36 | 37 | 38 | 05 | 39 | 30 | |
| | 39 | 03 | 40 | 40 | 42 | 52 | 43 | 45 | 45 | 12 | |
| 5 | 45 | 44 | 47 | 23 | 48 | 58 | 50 | 27 | 51 | 52 | 7 |
| | 54 | 09 | 55 | 42 | 57 | 10 | 58 | 32 | 59 | 48 | |
| | 64 | 26 | 65 | 43 | 66 | 52 | 67 | 56 | 68 | 56 | |
| | 76 | 37 | 77 | 20 | 78 | 00 | 78 | 36 | 79 | 09 | |
| 6 | 90 | 00 | 90 | 00 | 90 | 00 | 90 | 00 | 90 | 00 | 6 |

| | 21 | 22 | 23 | 24 | 25 | |
|----|-------|-------|-------|-------|-------|----|
| H. | D. M. | D. M. | D. M. | D. M. | D. M. | H. |
| | 1 20 | 1 24 | 1 28 | 1 31 | 1 35 | |
| | 2 42 | 2 49 | 2 56 | 3 04 | 3 10 | |
| | 4 05 | 4 15 | 4 26 | 4 37 | 4 47 | |
| I | 5 29 | 5 44 | 5 58 | 6 13 | 6 27 | II |
| | 6 56 | 7 14 | 7 32 | 7 51 | 8 08 | |
| | 8 27 | 8 49 | 9 11 | 9 34 | 9 55 | |
| | 10 00 | 10 26 | 10 52 | 11 19 | 11 44 | |
| 2 | 11 41 | 12 11 | 12 41 | 13 13 | 13 42 | 10 |
| | 13 26 | 14 01 | 14 36 | 15 10 | 15 43 | |
| | 15 20 | 15 59 | 16 38 | 17 18 | 17 54 | |
| | 17 24 | 18 08 | 18 52 | 19 35 | 20 17 | |
| 3 | 19 43 | 20 31 | 21 13 | 22 08 | 22 52 | 9 |
| | 22 15 | 23 08 | 24 01 | 24 53 | 25 41 | |
| | 25 01 | 26 00 | 26 58 | 27 56 | 28 50 | |
| | 28 11 | 29 16 | 30 18 | 31 21 | 32 18 | |
| 4 | 31 50 | 32 56 | 34 02 | 35 10 | 36 08 | 8 |
| | 36 00 | 37 11 | 38 20 | 39 30 | 40 32 | |
| | 40 48 | 42 03 | 43 14 | 44 25 | 45 28 | |
| | 46 31 | 47 46 | 49 00 | 50 08 | 51 10 | |
| 5 | 53 09 | 54 20 | 55 27 | 56 33 | 57 31 | 7 |
| | 60 57 | 61 59 | 62 16 | 63 55 | 64 44 | |
| | 69 48 | 70 36 | 71 20 | 72 03 | 72 39 | |
| | 79 38 | 80 04 | 80 27 | 80 50 | 81 10 | |
| 6 | 90 00 | 90 00 | 90 00 | 90 00 | 90 00 | 6 |

B

| | 26 | | 27 | | 28 | | 29 | | 30 | | |
|----|----|----|----|----|----|----|----|----|----|----|----|
| H. | D. | M. | D. | M. | D. | M. | D. | M. | D. | M. | H. |
| | 1 | 38 | 1 | 42 | 1 | 45 | 1 | 49 | 1 | 52 | |
| | 3 | 18 | 3 | 24 | 3 | 32 | 3 | 39 | 3 | 45 | |
| | 4 | 58 | 5 | 10 | 5 | 19 | 5 | 30 | 5 | 40 | |
| 1 | 6 | 42 | 6 | 57 | 7 | 10 | 7 | 24 | 7 | 37 | 11 |
| | 8 | 26 | 8 | 45 | 9 | 02 | 9 | 20 | 9 | 36 | |
| | 10 | 17 | 10 | 39 | 11 | 00 | 11 | 21 | 11 | 41 | |
| | 12 | 09 | 12 | 36 | 13 | 00 | 13 | 24 | 13 | 49 | |
| 2 | 14 | 11 | 14 | 41 | 15 | 09 | 15 | 37 | 16 | 05 | 10 |
| | 16 | 16 | 16 | 51 | 17 | 22 | 17 | 54 | 18 | 25 | |
| | 18 | 32 | 19 | 10 | 19 | 45 | 20 | 21 | 20 | 55 | |
| | 20 | 57 | 21 | 41 | 22 | 19 | 22 | 59 | 23 | 36 | |
| 3 | 23 | 38 | 24 | 25 | 25 | 08 | 25 | 51 | 26 | 31 | 9 |
| | 26 | 32 | 27 | 23 | 28 | 09 | 28 | 56 | 29 | 40 | |
| | 29 | 43 | 30 | 38 | 31 | 28 | 32 | 17 | 33 | 04 | |
| | 33 | 16 | 34 | 13 | 35 | 05 | 35 | 58 | 36 | 48 | |
| 4 | 37 | 08 | 38 | 10 | 39 | 05 | 40 | 00 | 40 | 50 | 8 |
| | 41 | 35 | 42 | 38 | 43 | 33 | 44 | 29 | 45 | 20 | |
| | 46 | 31 | 47 | 35 | 48 | 30 | 49 | 25 | 50 | 15 | |
| | 52 | 11 | 53 | 12 | 54 | 05 | 55 | 00 | 55 | 46 | |
| 5 | 58 | 28 | 59 | 24 | 60 | 12 | 61 | 00 | 61 | 43 | 7 |
| | 65 | 30 | 66 | 20 | 67 | 00 | 67 | 40 | 68 | 15 | |
| | 73 | 14 | 73 | 49 | 74 | 18 | 74 | 29 | 75 | 12 | |
| | 81 | 29 | 81 | 47 | 82 | 02 | 82 | 17 | 82 | 31 | |
| 6 | 90 | 00 | 90 | 00 | 90 | 00 | 90 | 00 | 90 | 00 | 6 |

| | 31 | 32 | 33 | 34 | 35 | |
|----|-------|-------|-------|-------|-------|----|
| H. | D. M. | D. M. | D. M. | D. M. | D. M. | H. |
| | 1 55 | 1 59 | 2 02 | 2 05 | 2 09 | |
| | 3 53 | 3 59 | 4 06 | 4 12 | 4 19 | |
| | 5 50 | 6 01 | 6 11 | 6 20 | 6 30 | |
| 1 | 7 51 | 8 05 | 8 18 | 8 31 | 8 44 | 11 |
| | 9 53 | 10 11 | 10 28 | 10 43 | 11 00 | |
| | 12 01 | 12 23 | 12 43 | 13 02 | 13 21 | |
| | 14 12 | 14 37 | 15 00 | 15 22 | 15 46 | |
| 2 | 16 31 | 17 01 | 17 28 | 17 52 | 18 18 | 10 |
| | 18 56 | 19 28 | 19 58 | 20 27 | 20 56 | |
| | 21 29 | 22 05 | 22 38 | 23 09 | 23 41 | |
| | 24 15 | 24 52 | 25 31 | 26 03 | 26 38 | |
| 3 | 27 13 | 27 55 | 28 35 | 29 11 | 29 49 | 9 |
| | 30 25 | 31 10 | 31 52 | 32 31 | 33 11 | |
| | 33 51 | 34 39 | 35 24 | 36 04 | 36 46 | |
| | 37 35 | 38 26 | 39 11 | 39 55 | 40 36 | |
| 4 | 41 40 | 42 31 | 43 20 | 44 03 | 44 48 | 8 |
| | 46 12 | 47 03 | 47 50 | 48 34 | 49 18 | |
| | 51 06 | 51 06 | 52 42 | 53 28 | 54 05 | |
| | 56 35 | 57 20 | 58 03 | 58 42 | 59 21 | |
| 5 | 62 26 | 63 07 | 63 45 | 64 20 | 64 53 | 7 |
| | 68 50 | 69 25 | 69 56 | 70 23 | 70 51 | |
| | 75 37 | 76 02 | 76 20 | 76 44 | 77 03 | |
| | 82 44 | 82 57 | 83 08 | 83 18 | 83 28 | |
| 6 | 90 00 | 90 00 | 90 00 | 90 00 | 90 00 | 6 |

| | 36 | 37 | 38 | 39 | 40 | |
|----|-------|-------|-------|-------|-------|----|
| H. | D. M. | D. M. | D. M. | D. M. | D. M. | H. |
| | 2 12 | 2 15 | 2 18 | 2 21 | 2 24 | |
| | 4 25 | 4 31 | 4 38 | 4 43 | 4 50 | |
| | 6 40 | 6 49 | 6 58 | 7 07 | 7 17 | |
| I | 8 57 | 9 09 | 9 22 | 9 34 | 9 47 | II |
| | 11 16 | 11 31 | 11 47 | 12 01 | 12 18 | |
| | 13 41 | 14 00 | 14 19 | 14 35 | 14 55 | |
| | 16 08 | 16 29 | 16 51 | 17 11 | 17 33 | |
| 2 | 18 44 | 19 08 | 19 33 | 19 56 | 20 21 | IO |
| | 21 24 | 21 52 | 22 19 | 22 45 | 23 13 | |
| | 24 14 | 24 43 | 25 14 | 25 41 | 26 12 | |
| | 27 13 | 27 46 | 28 18 | 28 49 | 29 23 | |
| 3 | 30 27 | 31 01 | 31 36 | 32 08 | 32 44 | 9 |
| | 33 51 | 34 27 | 35 04 | 35 38 | 36 16 | |
| | 37 28 | 38 06 | 38 45 | 39 19 | 39 58 | |
| | 41 22 | 42 00 | 42 40 | 43 16 | 43 55 | |
| 4 | 45 29 | 46 10 | 46 48 | 47 24 | 48 04 | 8 |
| | 50 00 | 50 39 | 51 17 | 51 52 | 52 30 | |
| | 54 46 | 55 24 | 56 00 | 56 33 | 57 10 | |
| | 59 59 | 60 33 | 61 06 | 61 36 | 62 09 | |
| 5 | 65 27 | 65 56 | 66 26 | 66 52 | 67 20 | 7 |
| | 71 17 | 71 36 | 72 05 | 72 25 | 72 48 | |
| | 77 22 | 77 38 | 77 55 | 78 09 | 78 25 | |
| | 83 38 | 83 47 | 83 55 | 84 03 | 84 11 | |
| 6 | 90 00 | 90 00 | 90 00 | 90 00 | 90 00 | 6 |

| | 41 | 42 | 43 | 44 | 45 | |
|----|-------|-------|-------|-------|-------|----|
| H. | D. M. | D. M. | D. M. | D. M. | D. M. | H. |
| | 2 27 | 2 30 | 2 33 | 2 36 | 2 37 | |
| | 4 55 | 5 2 | 5 07 | 5 13 | 5 19 | |
| | 7 25 | 7 34 | 7 43 | 7 51 | 8 00 | |
| I | 9 57 | 10 10 | 10 21 | 10 32 | 10 43 | II |
| | 12 31 | 12 46 | 13 00 | 13 12 | 13 28 | |
| | 15 10 | 15 30 | 15 45 | 16 02 | 16 20 | |
| | 17 52 | 18 13 | 18 32 | 18 51 | 19 10 | |
| 2 | 20 42 | 21 06 | 21 27 | 21 48 | 22 11 | IO |
| | 23 45 | 24 02 | 24 26 | 24 50 | 25 15 | |
| | 26 38 | 27 06 | 27 32 | 28 00 | 28 25 | |
| | 29 51 | 30 20 | 30 47 | 31 15 | 31 46 | |
| 3 | 33 13 | 33 31 | 34 15 | 34 45 | 35 15 | 9 |
| | 36 46 | 37 20 | 37 51 | 38 21 | 38 52 | |
| | 40 30 | 41 04 | 41 36 | 42 08 | 42 40 | |
| | 44 26 | 45 00 | 45 33 | 46 06 | 46 36 | |
| 4 | 48 36 | 49 10 | 49 42 | 50 12 | 50 44 | 8 |
| | 53 01 | 53 35 | 54 05 | 54 35 | 55 05 | |
| | 57 38 | 58 10 | 58 39 | 59 07 | 59 34 | |
| | 62 35 | 63 04 | 63 30 | 63 55 | 64 20 | |
| 5 | 67 42 | 68 07 | 68 29 | 68 50 | 69 12 | 7 |
| | 73 06 | 73 25 | 73 43 | 73 59 | 74 16 | |
| | 78 37 | 78 51 | 79 03 | 79 15 | 79 26 | |
| | 84 17 | 84 24 | 84 30 | 84 36 | 84 42 | |
| 6 | 90 00 | 90 00 | 90 00 | 90 00 | 90 00 | 6 |

| | 46 | 47 | 48 | 49 | 50 | |
|----|-------|-------|-------|-------|-------|----|
| H. | D. M. | H. M. | D. M. | D. M. | D. M. | H. |
| | 2 41 | 2 44 | 2 47 | 2 49 | 2 52 | |
| | 5 24 | 5 30 | 5 35 | 5 40 | 5 45 | |
| | 8 7 | 8 16 | 8 24 | 8 31 | 8 39 | |
| 1 | 10 54 | 11 05 | 11 16 | 11 25 | 11 36 | 11 |
| | 13 41 | 13 55 | 14 07 | 14 20 | 14 33 | |
| | 16 35 | 16 51 | 17 6 | 17 20 | 17 36 | |
| | 19 28 | 19 48 | 20 05 | 20 21 | 20 39 | |
| 2 | 22 31 | 22 53 | 23 13 | 23 30 | 23 51 | 10 |
| | 25 35 | 26 00 | 26 23 | 26 42 | 27 04 | |
| | 28 48 | 29 15 | 29 39 | 29 59 | 30 23 | |
| | 32 08 | 32 39 | 33 04 | 33 26 | 33 51 | |
| 3 | 35 41 | 36 11 | 36 37 | 37 00 | 37 27 | 9 |
| | 39 18 | 39 51 | 40 18 | 40 41 | 41 10 | |
| | 43 07 | 43 38 | 44 06 | 44 30 | 44 58 | |
| | 47 04 | 47 36 | 48 04 | 48 28 | 48 54 | |
| 4 | 51 11 | 51 42 | 52 08 | 52 32 | 52 58 | 8 |
| | 55 31 | 56 00 | 56 26 | 56 48 | 57 13 | |
| | 59 59 | 60 26 | 60 50 | 61 10 | 61 33 | |
| | 64 41 | 65 06 | 65 27 | 65 45 | 66 05 | |
| 5 | 69 30 | 69 50 | 70 08 | 70 23 | 70 41 | 7 |
| | 74 30 | 74 47 | 75 01 | 75 12 | 75 26 | |
| | 79 36 | 79 46 | 79 57 | 80 05 | 80 14 | |
| | 84 47 | 84 53 | 84 57 | 84 58 | 85 02 | |
| 6 | 90 00 | 90 00 | 90 00 | 90 00 | 90 00 | 6 |

| | 51 | 52 | 53 | 54 | 55 | |
|----|-------|-------|-------|-------|-------|----|
| H. | D. M. | D. M. | D. M. | D. M. | D. M. | H. |
| | 2 54 | 2 56 | 2 59 | 3 1 | 3 04 | |
| | 5 50 | 5 55 | 6 00 | 6 4 | 6 09 | |
| | 8 47 | 8 54 | 9 01 | 9 10 | 9 15 | |
| 1 | 11 45 | 11 55 | 12 05 | 12 13 | 12 23 | 11 |
| | 14 46 | 14 57 | 15 08 | 15 19 | 15 31 | |
| | 17 51 | 18 03 | 18 17 | 18 29 | 18 45 | |
| | 20 56 | 21 11 | 21 27 | 21 40 | 21 57 | |
| 2 | 24 09 | 24 26 | 24 44 | 24 59 | 25 18 | 10 |
| | 27 23 | 27 43 | 28 03 | 28 19 | 28 39 | |
| | 30 44 | 31 07 | 31 26 | 31 44 | 32 05 | |
| | 34 12 | 34 34 | 34 57 | 35 15 | 35 39 | |
| 3 | 37 50 | 38 13 | 38 36 | 39 03 | 39 18 | 9 |
| | 41 32 | 41 57 | 42 19 | 42 39 | 43 03 | |
| | 45 21 | 45 45 | 46 10 | 46 30 | 46 52 | |
| | 49 18 | 49 41 | 50 05 | 50 25 | 50 48 | |
| 4 | 53 22 | 53 44 | 54 07 | 54 26 | 54 47 | 8 |
| | 57 35 | 57 56 | 58 17 | 58 35 | 58 56 | |
| | 61 53 | 62 13 | 62 26 | 62 48 | 63 07 | |
| | 66 23 | 66 40 | 66 57 | 67 11 | 67 28 | |
| 5 | 70 56 | 71 09 | 71 25 | 71 37 | 71 51 | 7 |
| | 75 37 | 75 49 | 76 00 | 76 09 | 76 20 | |
| | 80 23 | 80 30 | 80 38 | 80 44 | 80 52 | |
| | 85 06 | 85 10 | 85 14 | 85 18 | 85 22 | |
| 6 | 90 00 | 90 00 | 90 00 | 90 00 | 90 00 | 6 |

| | 56 | 57 | 58 | 59 | 60 | |
|----|-------|-------|-------|-------|-------|----|
| H. | D. M. | D. M. | D. M. | D. M. | D. M. | H. |
| — | 3 07 | 3 8 | 3 10 | 3 12 | 3 14 | |
| | 6 13 | 6 18 | 6 22 | 6 28 | 6 30 | |
| | 9 21 | 9 27 | 9 34 | 9 43 | 9 46 | |
| 1 | 12 32 | 12 39 | 12 49 | 13 00 | 13 04 | 11 |
| | 15 42 | 15 52 | 16 02 | 16 16 | 16 22 | |
| | 18 57 | 19 08 | 19 21 | 19 38 | 19 44 | |
| | 22 12 | 22 24 | 22 38 | 22 58 | 23 04 | |
| 2 | 25 33 | 25 49 | 26 04 | 26 26 | 26 32 | 10 |
| | 28 56 | 29 12 | 29 29 | 29 53 | 30 01 | |
| | 32 23 | 32 41 | 32 59 | 33 24 | 33 31 | |
| | 35 59 | 36 16 | 36 34 | 37 00 | 37 10 | |
| 3 | 39 38 | 40 00 | 40 17 | 40 44 | 40 51 | 9 |
| | 43 23 | 43 42 | 44 02 | 44 30 | 44 39 | |
| | 47 12 | 47 33 | 47 52 | 48 18 | 48 28 | |
| | 51 08 | 51 27 | 51 45 | 52 12 | 52 22 | |
| 4 | 55 06 | 55 25 | 55 43 | 56 09 | 56 16 | 8 |
| | 59 14 | 59 31 | 59 48 | 60 12 | 60 20 | |
| | 63 23 | 63 39 | 63 55 | 64 17 | 64 23 | |
| | 67 42 | 67 56 | 68 10 | 68 29 | 68 30 | |
| 5 | 72 02 | 72 14 | 72 25 | 72 41 | 72 46 | 7 |
| | 76 29 | 76 35 | 76 47 | 76 59 | 77 03 | |
| | 80 58 | 81 04 | 81 10 | 81 18 | 81 21 | |
| | 85 28 | 85 31 | 85 34 | 85 39 | 85 40 | |
| 6 | 90 00 | 90 00 | 90 00 | 90 00 | 90 00 | 6 |

H.

II

IO

9

8

7

6

| | 61 | 62 | 63 | 64 | 65 | |
|----|-------|-------|-------|-------|-------|----|
| H. | D. M. | D. M. | D. M. | D. M. | D. M. | H. |
| | 3 16 | 3 18 | 3 20 | 3 22 | 3 24 | |
| | 6 33 | 6 37 | 6 41 | 6 44 | 6 48 | |
| | 9 51 | 9 56 | 10 02 | 10 07 | 10 12 | |
| I | 13 10 | 13 17 | 13 24 | 13 32 | 13 39 | II |
| | 16 30 | 16 38 | 16 47 | 16 55 | 17 04 | |
| | 19 53 | 20 03 | 20 12 | 20 24 | 20 34 | |
| | 23 15 | 23 27 | 23 38 | 23 50 | 24 02 | |
| 2 | 26 45 | 26 58 | 27 11 | 27 23 | 27 36 | IO |
| | 30 14 | 30 28 | 30 41 | 30 55 | 31 09 | |
| | 33 46 | 34 01 | 34 15 | 34 30 | 44 45 | |
| | 37 25 | 37 39 | 37 55 | 38 10 | 38 25 | |
| 3 | 41 08 | 41 23 | 41 39 | 41 55 | 42 11 | 9 |
| | 44 54 | 45 09 | 45 25 | 45 41 | 45 57 | |
| | 48 42 | 48 58 | 49 14 | 49 30 | 49 45 | |
| | 52 35 | 52 51 | 53 06 | 53 22 | 53 36 | |
| 4 | 56 31 | 56 45 | 57 00 | 57 15 | 57 30 | 8 |
| | 60 33 | 60 46 | 61 00 | 61 13 | 61 26 | |
| | 64 35 | 64 47 | 65 00 | 65 12 | 65 24 | |
| | 68 45 | 68 56 | 69 06 | 69 17 | 69 27 | |
| 5 | 72 55 | 73 03 | 73 12 | 73 21 | 73 30 | 7 |
| | 77 10 | 77 17 | 77 13 | 77 30 | 77 37 | |
| | 81 25 | 81 30 | 81 35 | 81 39 | 81 44 | |
| | 85 42 | 85 45 | 85 47 | 85 49 | 85 52 | |
| 6 | 90 00 | 90 00 | 90 00 | 90 00 | 90 00 | 6 |

| | 66 | 67 | 68 | 69 | 70 | |
|----|-------|-------|-------|-------|-------|----|
| H. | D. M. | D. M. | D. M. | D. M. | D. M. | H. |
| — | 3 25 | 3 26 | 3 28 | 3 29 | 3 30 | — |
| | 6 51 | 6 55 | 6 57 | 7 00 | 7 02 | |
| | 10 17 | 10 22 | 10 26 | 10 29 | 10 34 | |
| 1 | 13 45 | 13 52 | 14 03 | 14 07 | 14 12 | 11 |
| — | 17 11 | 17 20 | 17 27 | 17 33 | 17 38 | — |
| | 20 40 | 20 52 | 21 00 | 21 09 | 21 14 | |
| | 24 11 | 24 22 | 24 31 | 24 40 | 24 46 | |
| 2 | 27 46 | 27 59 | 28 09 | 28 19 | 28 26 | 10 |
| — | 31 21 | 31 34 | 31 45 | 31 56 | 32 03 | — |
| | 34 56 | 35 11 | 35 22 | 35 33 | 35 41 | |
| | 38 37 | 38 52 | 39 04 | 39 16 | 39 23 | |
| 3 | 42 32 | 42 38 | 42 50 | 43 02 | 43 10 | 9 |
| — | 46 09 | 46 25 | 46 36 | 46 48 | 46 57 | — |
| | 49 58 | 50 11 | 50 25 | 50 36 | 50 44 | |
| | 53 48 | 54 02 | 54 15 | 54 26 | 54 34 | |
| 4 | 42 41 | 57 54 | 58 05 | 58 15 | 58 23 | 8 |
| — | 61 36 | 61 50 | 61 59 | 62 09 | 62 16 | — |
| | 65 34 | 65 45 | 65 53 | 66 02 | 66 08 | |
| | 69 35 | 69 45 | 69 53 | 70 01 | 70 06 | |
| 5 | 73 36 | 73 44 | 73 51 | 73 57 | 74 02 | 7 |
| — | 77 42 | 77 48 | 77 53 | 77 58 | 78 01 | — |
| | 81 47 | 81 51 | 81 55 | 81 58 | 82 00 | |
| | 85 53 | 85 55 | 85 58 | 86 59 | 86 00 | |
| 6 | 90 00 | 90 00 | 90 00 | 90 00 | 90 00 | 6 |

H.

II

10

9

8

7

6

| | 71 | 72 | 73 | 74 | 75 | |
|---|-------|-------|-------|-------|-------|----|
| H | D. M. | D. M. | D. M. | D. M. | D. M. | H. |
| | 3 32 | 3 34 | 3 35 | 3 36 | 3 36 | |
| | 7 05 | 7 08 | 7 10 | 7 12 | 7 14 | |
| | 10 38 | 10 42 | 10 45 | 10 48 | 10 51 | |
| I | 14 18 | 14 23 | 14 26 | 14 29 | 14 33 | II |
| | 17 46 | 17 52 | 17 56 | 18 01 | 18 06 | |
| | 21 22 | 21 30 | 21 36 | 21 41 | 21 46 | |
| | 24 59 | 25 05 | 25 11 | 25 17 | 25 23 | |
| 2 | 28 36 | 28 46 | 28 53 | 28 59 | 29 06 | 10 |
| | 32 13 | 32 24 | 32 31 | 32 38 | 32 45 | |
| | 35 52 | 36 03 | 36 11 | 36 18 | 36 26 | |
| | 39 35 | 39 47 | 39 54 | 40 02 | 40 10 | |
| 3 | 43 22 | 43 33 | 43 41 | 43 49 | 43 57 | 9 |
| | 47 08 | 47 20 | 47 28 | 47 36 | 47 44 | |
| | 50 55 | 51 07 | 51 15 | 51 23 | 51 31 | |
| | 54 45 | 54 54 | 55 01 | 55 09 | 55 16 | |
| 4 | 58 32 | 58 42 | 58 49 | 58 56 | 59 03 | 8 |
| | 62 26 | 62 35 | 62 42 | 62 48 | 62 55 | |
| | 66 18 | 66 26 | 66 31 | 66 37 | 66 43 | |
| | 70 13 | 70 21 | 70 26 | 70 31 | 70 36 | |
| 5 | 74 08 | 74 14 | 74 18 | 74 22 | 74 26 | 7 |
| | 78 06 | 78 08 | 78 14 | 78 17 | 78 20 | |
| | 82 04 | 82 07 | 82 09 | 82 11 | 82 13 | |
| | 86 01 | 86 03 | 86 05 | 86 06 | 86 07 | |
| 6 | 90 00 | 90 00 | 90 00 | 90 00 | 90 00 | 6 |

| | 76 | 77 | 78 | 79 | 80 | |
|----|-------|-------|-------|-------|-------|----|
| H. | D. M. | D. M. | D. M. | D. M. | D. M. | H. |
| | 3 37 | 3 38 | 3 39 | 3 40 | 3 41 | |
| | 7 16 | 7 18 | 7 20 | 7 21 | 7 23 | |
| | 10 54 | 10 57 | 11 00 | 11 02 | 11 04 | |
| 1 | 14 37 | 14 41 | 14 44 | 14 47 | 14 51 | 11 |
| | 18 11 | 18 16 | 18 21 | 18 24 | 18 28 | |
| | 21 52 | 21 57 | 22 03 | 22 06 | 22 12 | |
| | 25 29 | 25 35 | 25 41 | 25 44 | 25 51 | |
| 2 | 29 13 | 29 19 | 29 26 | 29 30 | 29 36 | 10 |
| | 32 52 | 33 00 | 33 07 | 33 11 | 33 18 | |
| | 36 33 | 36 49 | 36 52 | 36 59 | 37 04 | |
| | 40 18 | 40 26 | 40 33 | 40 38 | 40 44 | |
| 3 | 44 05 | 44 13 | 44 21 | 44 25 | 44 33 | 9 |
| | 47 51 | 47 59 | 48 07 | 48 12 | 48 18 | |
| | 51 38 | 51 45 | 51 53 | 51 59 | 52 05 | |
| | 55 24 | 55 31 | 55 42 | 55 49 | 55 53 | |
| 4 | 59 10 | 59 17 | 59 24 | 59 28 | 59 34 | 8 |
| | 63 01 | 63 07 | 63 14 | 63 17 | 63 23 | |
| | 66 49 | 66 54 | 67 00 | 67 03 | 67 09 | |
| | 70 41 | 70 46 | 70 51 | 70 55 | 70 58 | |
| 5 | 74 30 | 74 35 | 74 39 | 74 41 | 74 45 | 7 |
| | 78 23 | 78 27 | 78 30 | 78 31 | 78 34 | |
| | 82 15 | 82 17 | 82 20 | 82 21 | 82 23 | |
| | 86 08 | 86 10 | 86 11 | 86 12 | 86 12 | |
| 6 | 90 00 | 90 00 | 90 00 | 90 00 | 90 00 | 6 |

| | 81 | 82 | 83 | 84 | 85 | |
|----|-------|-------|-------|-------|-------|----|
| H. | D. M. | H. M. | D. M. | D. M. | D. M. | H. |
| | 3 41 | 3 42 | 3 43 | 3 44 | 3 45 | |
| | 7 24 | 7 25 | 7 26 | 7 27 | 7 28 | |
| | 11 6 | 11 07 | 11 09 | 11 10 | 11 11 | |
| I | 14 53 | 14 55 | 14 55 | 14 56 | 14 58 | 11 |
| | 18 31 | 18 33 | 18 34 | 18 36 | 18 39 | |
| | 22 15 | 22 17 | 22 19 | 22 21 | 22 24 | |
| | 25 54 | 25 57 | 26 00 | 26 03 | 26 06 | |
| 2 | 29 41 | 26 44 | 29 46 | 29 49 | 29 52 | 10 |
| | 33 23 | 33 26 | 33 28 | 33 31 | 33 35 | |
| | 37 08 | 37 11 | 37 15 | 37 19 | 37 20 | |
| | 40 44 | 40 53 | 40 57 | 40 59 | 41 05 | |
| 3 | 44 37 | 44 41 | 44 45 | 44 49 | 44 53 | 9 |
| | 48 23 | 48 27 | 48 31 | 48 35 | 48 39 | |
| | 52 09 | 52 12 | 52 16 | 52 20 | 52 24 | |
| | 55 57 | 56 00 | 56 04 | 56 08 | 56 09 | |
| 4 | 59 38 | 59 41 | 59 45 | 59 48 | 59 52 | 8 |
| | 63 27 | 63 30 | 63 33 | 63 36 | 63 39 | |
| | 67 11 | 67 14 | 67 17 | 67 20 | 67 23 | |
| | 71 00 | 71 03 | 71 05 | 71 08 | 71 09 | |
| 7 | 74 47 | 74 49 | 74 51 | 74 53 | 74 55 | 7 |
| | 78 36 | 78 37 | 78 40 | 78 41 | 78 42 | |
| | 82 24 | 82 25 | 82 26 | 82 27 | 82 28 | |
| | 86 13 | 86 13 | 86 14 | 86 15 | 86 15 | |
| 6 | 90 00 | 90 00 | 90 00 | 90 00 | 90 00 | 6 |

| | 86 | 87 | 88 | 89 | 90 | |
|----|-------|-------|-------|-------|-------|----|
| H. | D. M. | D. M. | D. M. | D. M. | D. M. | H. |
| | 3 45 | 3 45 | 3 45 | 3 45 | 3 45 | |
| | 7 29 | 7 30 | 7 31 | 7 32 | 7 33 | |
| | 11 12 | 11 13 | 11 13 | 11 13 | 11 13 | |
| 1 | 14 59 | 15 00 | 15 01 | 15 01 | 15 01 | 11 |
| | 18 40 | 18 41 | 18 42 | 18 43 | 18 43 | |
| | 22 27 | 22 28 | 22 29 | 22 29 | 22 29 | |
| | 26 07 | 26 09 | 26 10 | 26 11 | 26 12 | |
| 2 | 29 54 | 29 56 | 29 57 | 29 58 | 29 58 | 10 |
| | 33 37 | 33 39 | 33 40 | 33 41 | 33 41 | |
| | 37 23 | 37 24 | 37 25 | 37 26 | 37 26 | |
| | 41 06 | 41 08 | 41 09 | 41 10 | 41 11 | |
| 3 | 44 55 | 44 57 | 44 58 | 44 59 | 45 00 | 9 |
| | 48 41 | 48 42 | 48 43 | 48 44 | 48 44 | |
| | 52 26 | 52 27 | 52 28 | 52 29 | 52 29 | |
| | 56 11 | 56 12 | 56 13 | 56 14 | 56 14 | |
| 4 | 59 53 | 59 54 | 59 55 | 59 56 | 59 57 | 8 |
| | 63 40 | 63 42 | 63 43 | 63 44 | 63 44 | |
| | 67 24 | 67 26 | 67 26 | 67 26 | 67 27 | |
| | 71 10 | 71 13 | 71 14 | 71 15 | 71 16 | |
| 5 | 74 56 | 74 57 | 74 58 | 74 58 | 74 58 | 7 |
| | 78 43 | 78 44 | 78 44 | 78 44 | 78 44 | |
| | 82 29 | 82 30 | 82 30 | 82 30 | 82 30 | |
| | 86 15 | 86 15 | 86 15 | 86 15 | 86 15 | |
| 6 | 90 00 | 90 00 | 90 00 | 90 00 | 90 00 | 6 |

*Canons for Dialling by the Artificial Sines
and Tangents.*

1. For the Inclination of Meridians

As the Sine of the Latitude is to the Sine of 90,
So is the Tangent of the Declination to the
Tangent of the Inclination of Meridian.

2. For the Stiles Elevation.

As the Sine of 90 is to the Co-sine of the Declina-
tion,

So is the Co-sine of the Latitude to the Sine of the
Stiles Elevation.

*3. For the Distance of the Substile from
the Meridian.*

As the Sine of 90 is to the Sine of the Declination,
So is the Tangent of the Latitude to the Tangent
of the Substile from 12.

4. For Angle between 12 and 6.

As the Co-tangent of the Latitude is to the Sine
of 90,

So is the Sine of the Declination to the Co-tangent
of the Angle from 12 to 6.

5. For the Hours.

As the Sine of 90 is to the Sine of the Stiles height,
So is the Tangent of the Hours Angle at the Pole,
to the Tangent of the Hour from the Substile at the
Pole.

*A Table of the Sans Azimuth from the South, at
every Hour and Quarter, in each Sign in the
Latitude of 51 Deg. 32 Min.*

| | ♈ | ♉ | ♊ | ♋ | ♌ | ♍ | ♎ | ♏ | ♐ | ♑ | ♒ | ♓ |
|------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|------------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| | D. M. | D. M. | D. M. | D. M. | D. M. | D. M. | D. M. | D. M. | D. M. | D. M. | D. M. | D. M. |
| 12 | 00 00
07 10
14 22
21 27 | 00 00
05 53
13 24
19 53 | 00 00
05 53
13 24
19 53 | 00 00
05 53
13 24
19 53 | 00 00
05 53
13 24
19 53 | 00 00
05 53
13 24
19 53 | 00 00
05 53
13 24
19 53 | 00 00
05 53
13 24
19 53 | 00 00
05 53
13 24
19 53 | 00 00
05 53
13 24
19 53 | 00 00
05 53
13 24
19 53 | 00 00
05 53
13 24
19 53 |
| 11 1 | 27 54
34 14
40 12
45 39 | 26 00
32 01
37 40
43 04 | 22 13
27 32
32 41
37 32 | 18 52
23 22
27 41
32 08 | 16 22
20 15
24 06
29 44 | 14 45
18 17
21 53
26 30 | 14 13
17 38
20 59
24 25 | 13 13
16 38
20 59
24 25 | 12 14
15 18
19 21
23 26 | 11 11
14 15
18 21
22 26 | 10 10
13 14
17 17
21 21 | 08 00
11 04
15 07
19 10 |
| 10 2 | 50 51
55 31
61 43
64 11 | 47 57
52 41
57 11
61 18 | 42 05
47 04
51 50
54 33 | 36 24
40 30
44 26
48 13 | 31 50
35 15
39 10
42 36 | 28 52
32 18
35 39
38 50 | 27 49
31 15
34 36
37 34 | 26 46
30 12
33 33
36 31 | 25 42
29 08
32 29
35 38 | 24 40
27 45
31 06
34 11 | 23 37
26 42
30 03
33 08 | 22 34
25 39
29 00
32 05 |
| 9 3 | 68 10
71 52
75 26
78 48 | 65 16
69 56
72 37
76 05 | 58 47
62 33
66 10
69 38 | 51 56
55 33
59 02
62 22 | 46 02
49 25
52 43
55 55 | 42 42
45 45
48 48
51 51 | 40 40
43 43
46 46
49 49 | 38 36
41 39
44 42
47 45 | 36 33
39 36
42 39
45 42 | 34 30
37 33
40 36
43 39 | 32 27
35 30
38 33
41 36 | 30 24
33 27
36 30
39 33 |
| 8 4 | 82 00
85 08
88 10
91 09 | 79 20
82 42
85 38
87 50 | 72 57
76 12
79 23
82 28 | 65 40
68 53
72 06
75 03 | 59 00
62 08
65 12
68 12 | 54 12
57 15
60 18
63 21 | 52 10
55 13
58 16
61 19 | 50 07
53 10
56 13
59 16 | 48 04
51 07
54 10
57 13 | 46 01
49 04
52 07
55 10 | 44 00
47 03
50 06
53 09 | 42 00
45 03
48 06
51 09 |
| 7 5 | 94 00
96 51
99 38
102 25 | 91 34
94 25
97 16
100 07 | 85 30
88 27
91 25
94 22 | 78 06
81 09
84 06
87 04 | 71 10
74 13
77 16
80 19 | 65 12
68 15
71 18
74 21 | 63 10
66 13
69 16
72 19 | 61 07
64 10
67 13
70 16 | 59 04
62 07
65 10
68 13 | 57 01
60 04
63 07
66 10 | 55 00
58 03
61 06
64 09 | 53 00
56 03
59 06
62 09 |
| 6 6 | 105 08
107 52
110 36
113 18 | 102 54
104 58
108 26
111 14 | 97 12
100 02
103 00
105 54 | 90 00
93 00
96 00
99 00 | 83 00
86 00
89 00
92 00 | 76 00
79 00
82 00
85 00 | 74 00
77 00
80 00
83 00 | 72 00
75 00
78 00
81 00 | 70 00
73 00
76 00
79 00 | 68 00
71 00
74 00
77 00 | 66 00
69 00
72 00
75 00 | 64 00
67 00
70 00
73 00 |
| 5 7 | 116 03
118 50
121 41
124 29 | 114 03
116 54
119 47
122 37 | 108 03
111 03
114 03
117 03 | 101 03
104 03
107 03
110 03 | 94 03
97 03
100 03
103 03 | 87 03
90 03
93 03
96 03 | 85 03
88 03
91 03
94 03 | 83 03
86 03
89 03
92 03 | 81 03
84 03
87 03
90 03 | 79 03
82 03
85 03
88 03 | 77 03
80 03
83 03
86 03 | 75 03
78 03
81 03
84 03 |
| 4 8 | 127 24
130 28 | 124 24
127 28 | 117 24
120 28 | 110 24
113 28 | 103 24
106 28 | 96 24
99 28 | 89 24
92 28 | 87 24
90 28 | 85 24
88 28 | 83 24
86 28 | 81 24
84 28 | 79 24
82 28 |



0
M.
00
52
10
37
13
38
39
25
49
00
17
34
36
40
42
10



EUROPE

Lat. N. 72.

*As it is now Divided Contains these
Empires Kingdoms and Estates*

On the West

{ England
Scotland
Ireland
France
Spaine
Portugal

On the North

{ The Empire of Rullia
Sweden
Denmark

In the Middle

{ Italy
Germany
XVII Provinces

On the East

{ Poland
Lythvania
Turky in Europe
Petite Tartary

Lat. N. 35.

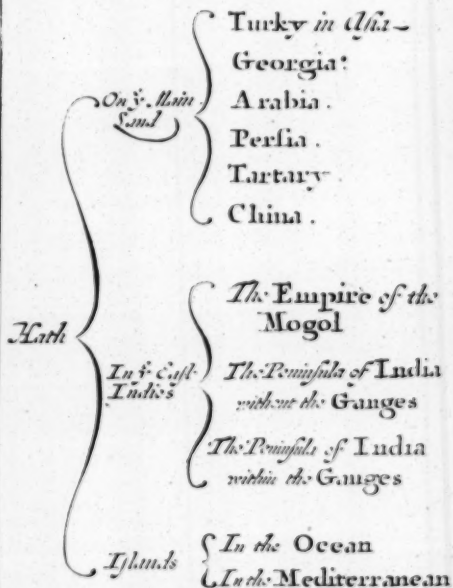
EUROPE



Europe is bounded on \bar{y} north with \bar{y} North-Sea, on the East with Asia, on the West with the Atlantick Ocean, and on \bar{y} South with \bar{y} Mediterranean Sea, in length 2800, & in breadth 1200 miles The Ayre temperate the Soyle fertile Mighty in Trade abounding in Riches excellent in all Arts & Sciences the People of white skins generally professing \bar{y} Chrestian faith inhabited by the lineage of Iaphet the 3 Principall languages Latin Tutoonick & Slavonian

A S I A

(*Sat N. 72.*)



(*Sat. S. 10.*)

ASIA



Asia is bounded on the West with Europe, on the North with the Main Scythick Ocean, on the East with the supposed Straits of Anion, on the South with part of the Mediterranean. The coasts of India Persia & Arabia. It is in length 5200, & in breadth 2500 miles. It hath ever been renowned for the Creation of Man, & renowned for the birth of our Saviour. In it was the Garden of Eden, it hath sway'd the Scepters of the Monarchs of the Assyrian Babylonians Medes & Persians. The people are generally of a Swarthy complexion & either Pagans or Mahometans, the greatest monarchs of this part are on the North the Tartars, on the S & W the Turks & on the E the Chineses and Japonenses.

A S I A

Sat. N. 72.



Sat. S. 10.

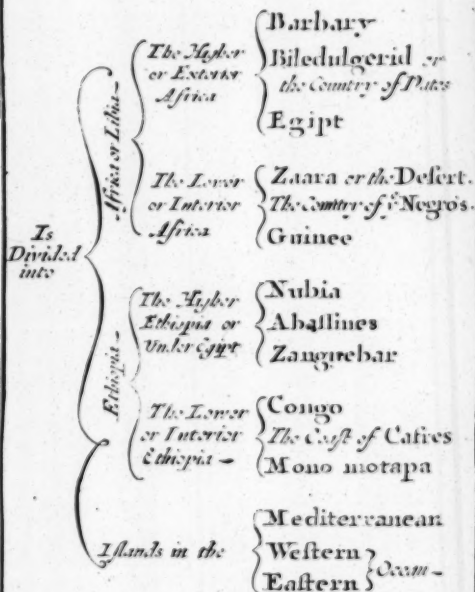
ASIA



Asia is bounded on the West with Europe, on the North with the Main Seuthick Ocean, on the East with the supposed Straits of Anion, on the South with part of the Mechteranean. The coasts of India Persia & Arabia. It is in length 3200, & in breadth 2200 miles. It hath ever been renowned for the Creation of Man, & is nowed for the birth of our Saviour. In it was the Garden of Eden, it hath sway'd the Scepters of the Monarchs of the Assyrian Babylonians Medes & Persians. The people are generally of a Swarthy complexion & either Pagans or Mahometans, the greatest monarchs of this part are on the North the Tartars, on the S & W the Turks & on the E the Chineses and Japonenses.

AFRICA

Lat. N. 55.



Lat. S. 55.

AFRICA



Africa is bounded on the East by the Red Sea or the Gulfe of Arabia, on the West with the Atlantick Ocean on the N. with y^e Mediterranean sea, & on y^e S. with y^e Ethiopick Ocean. Situate most under the Torrid Zone, & is the greatest Peninsula in the world being about 2000 leagues in breadth East & West, & 1800 leagues in length North & South. Here is professed Mahometisme, Egyptian Christianity & Iudayme. This parte is touched with y^e Royall Scepter of England in the strong hold of Tangier.

AMERICA.

Lat. N. 80.



Lat. S. 54.

AMERICA



America is divided into two great Peninsulas, the Northernmost is Mexicana and the Southernmost Peruviana. The first is divided into severall Provinces the principall of which hath Homage to Great Britains Monarch, this Part was to the Honour of our Nation first discovered by Maske son to Owen Guinead and afterward by Sebastin Cabot at the charge of King Henry the 7th. The second Peninsula containeth severall Provinces belonging to the Crown of Spaine & Portugal. The whole Continent aboundeth with all things necessary for use of man not only for food as fish flesh & fruits but also for great quantities of Silver that are found in bowels thereof

A person born August
the 25th at 8^h in the
morning it being the Hour
of K he also ruling that
day of the Week ~~and~~
if Sun in M it likewise
being the 29th Day of the
Moon age desires a Female
to be blessed with long life
Fortunate and happy &
all her ban eminent











Northum
berland

Durham

York Shire.

Lincoln Sh.

Derb Not
y. Sh. ting
am.

Lecester

Warwick

Northampton

Bedford

Sh. Bucks

Gloucester

Wilt

Bath

Hamp

Sh. Surrey

Suffex.

Kent.

Wight I.

*A Mapp of
the Kingdome of
ENGLAND.*

*By Iohn Seller.
Hydragrapher to the
King.*

THE GERMAN.

OCEAN.

Zeland

FLANDERS.

A Mapp of the POLE



[illegible]

NORTH.
By John Seller.

A Mapp of y^e two HEMIS



HEMISPHERES of *y* Heaven

NI CANCER.

LEO.

VIRGO

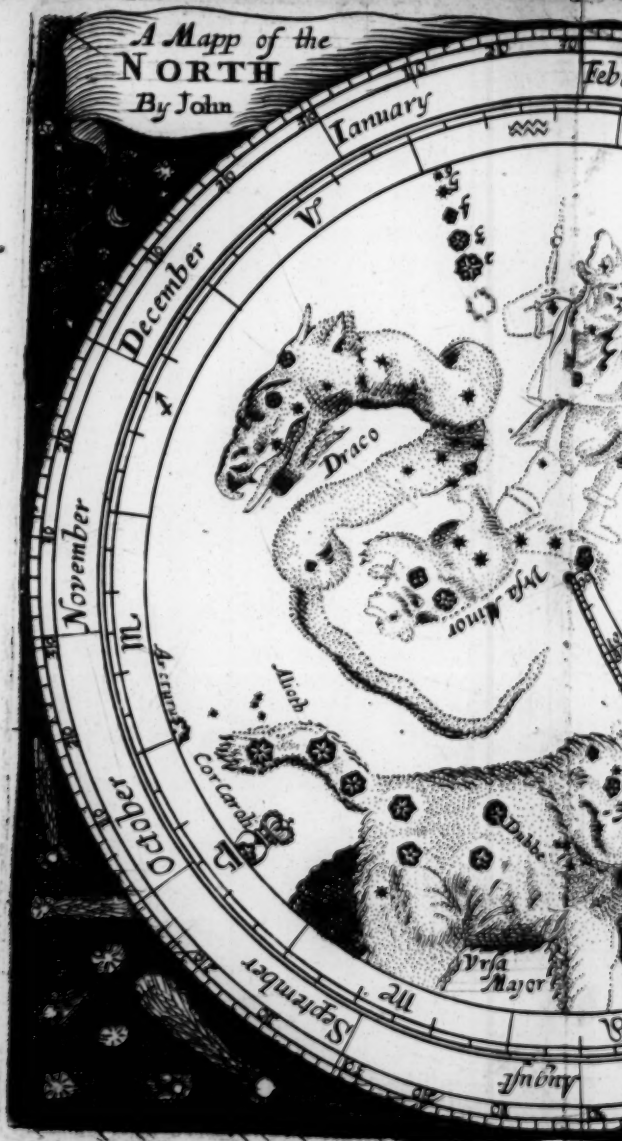
23

PISCES.

AR. CAPRICOR. AQUARI.



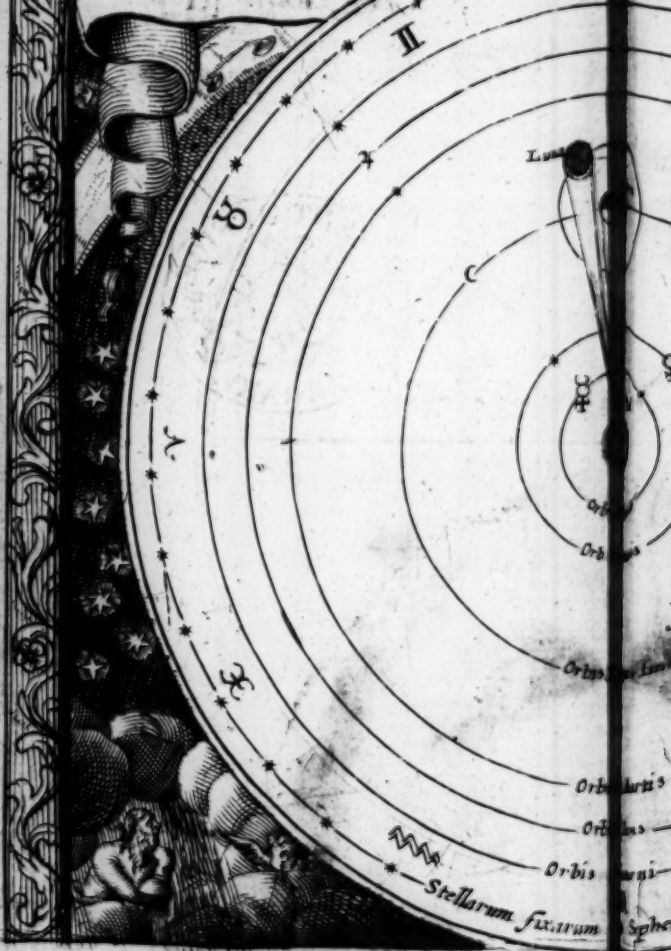
A Mapp of the
NORTH
By John



Constellations about
POLE
Seller



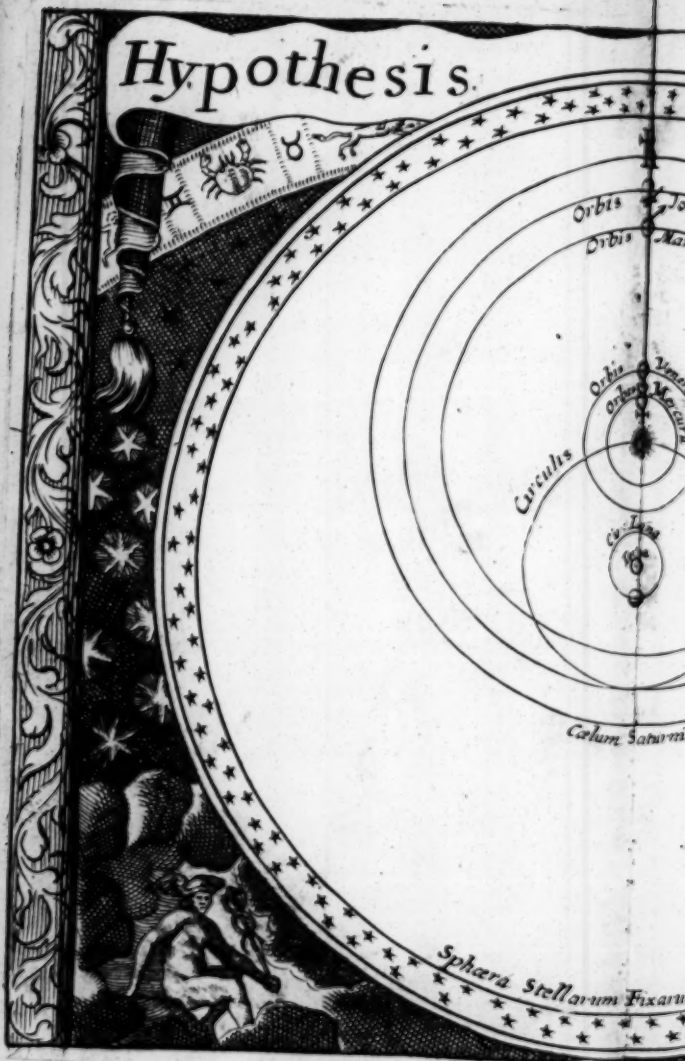
Hypothesis



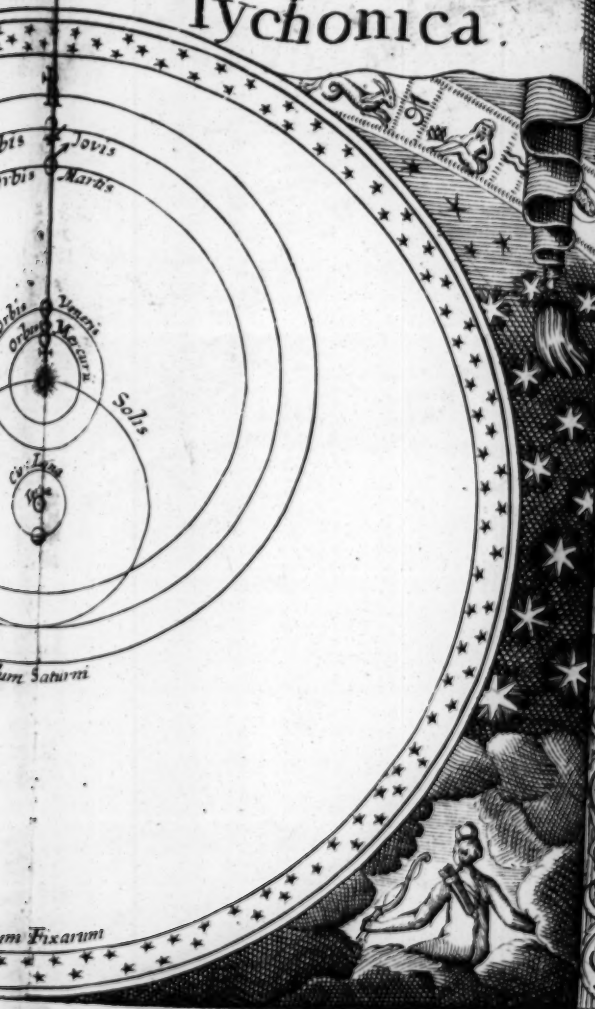
Copernicana



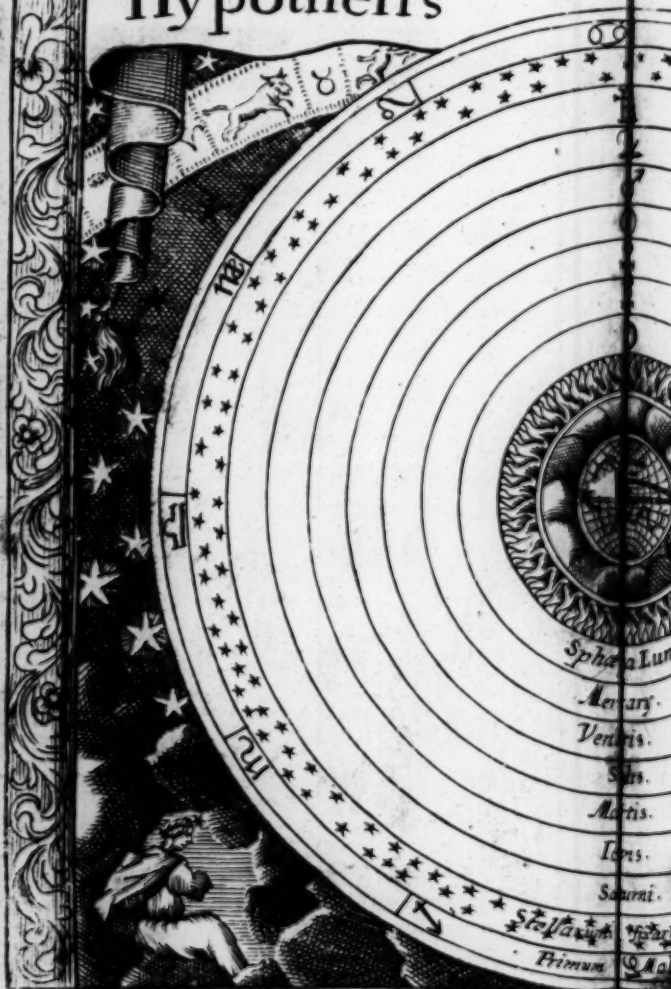
Hypothesis.



Tychonica.



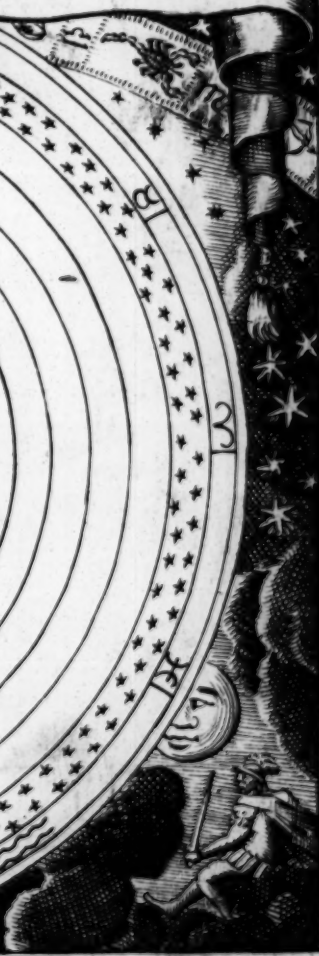
Hypothesis

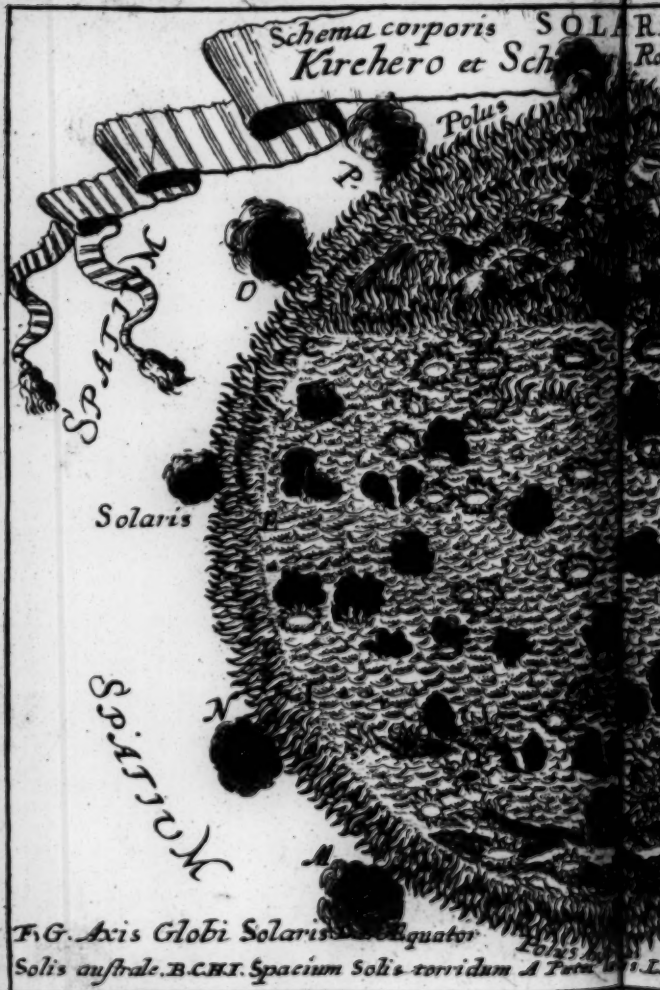


Ptolomaica.

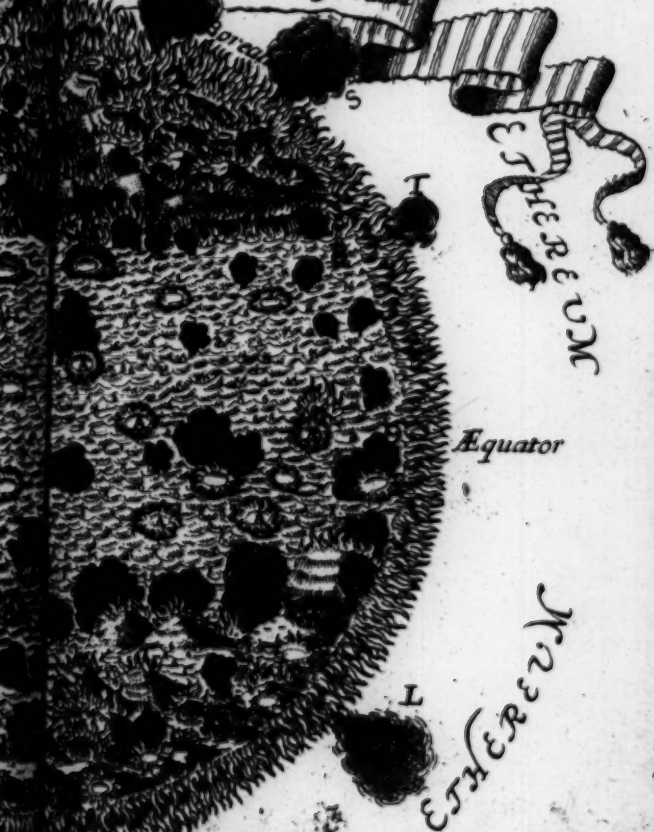


Pha. Luna.
Mercur.
Veneris.
Solis.
Martis.
Iovis.
Saturni.
Mabile.



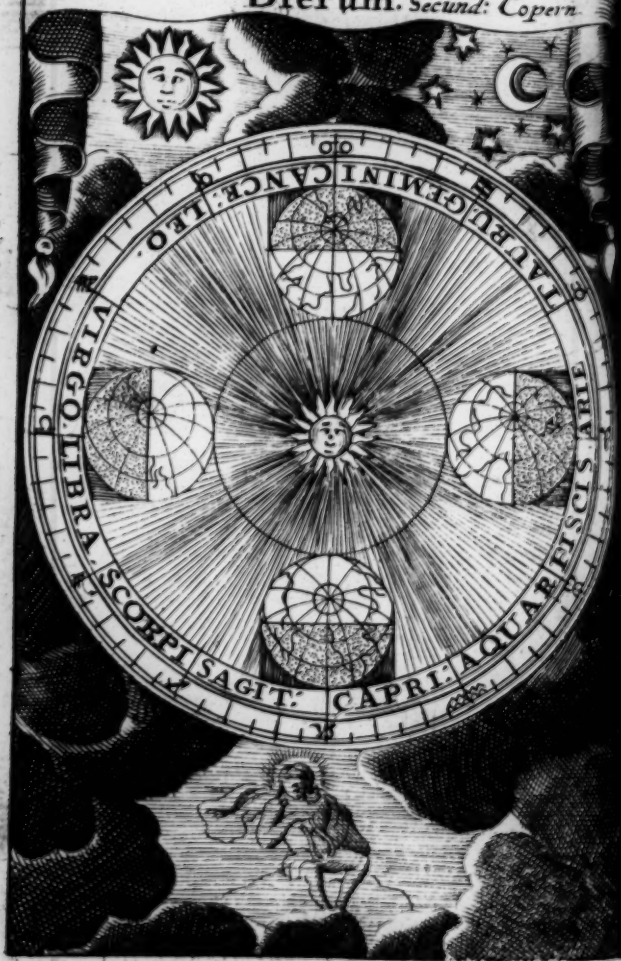


SOLARIS, prouta P.P.
 Roma 1635 observata



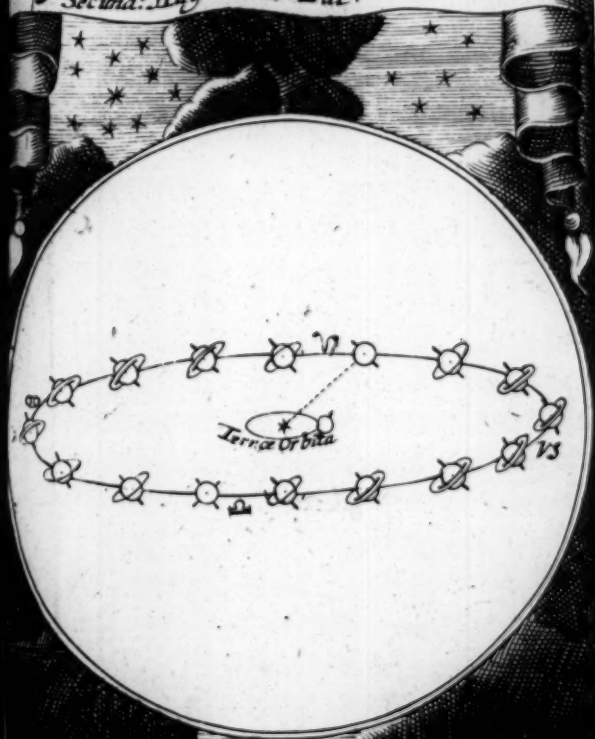
Solaris B.C. Spatium Solis Borealis H.G.S. Spatium
 L.A.N.O. etc. Evaporationes una et macularum Origo.

Incrementum et Decrementum
Dierum. *Secund: Copern.*

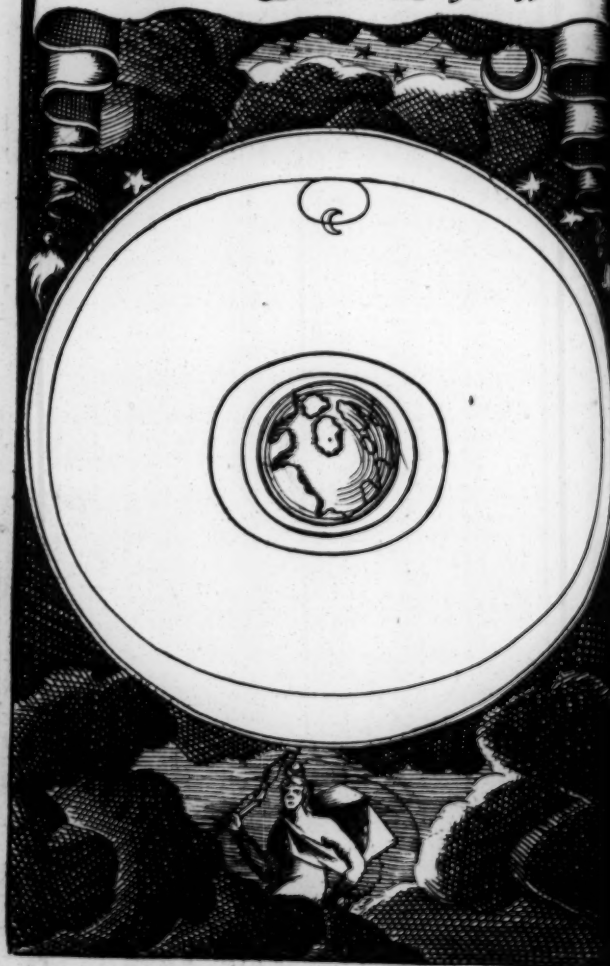


Systema Saturni.

Secund. Hugon M. Zul.

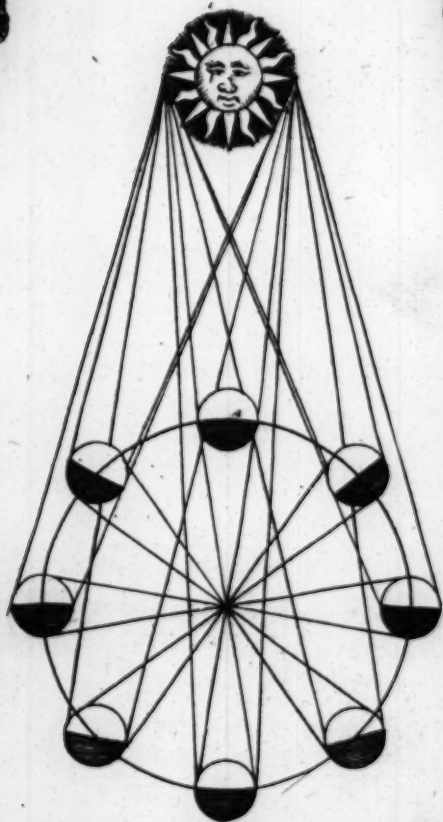


*Æstus Maris Per Motum Lunæ
Redes cartes. lib: 4. art 99.*

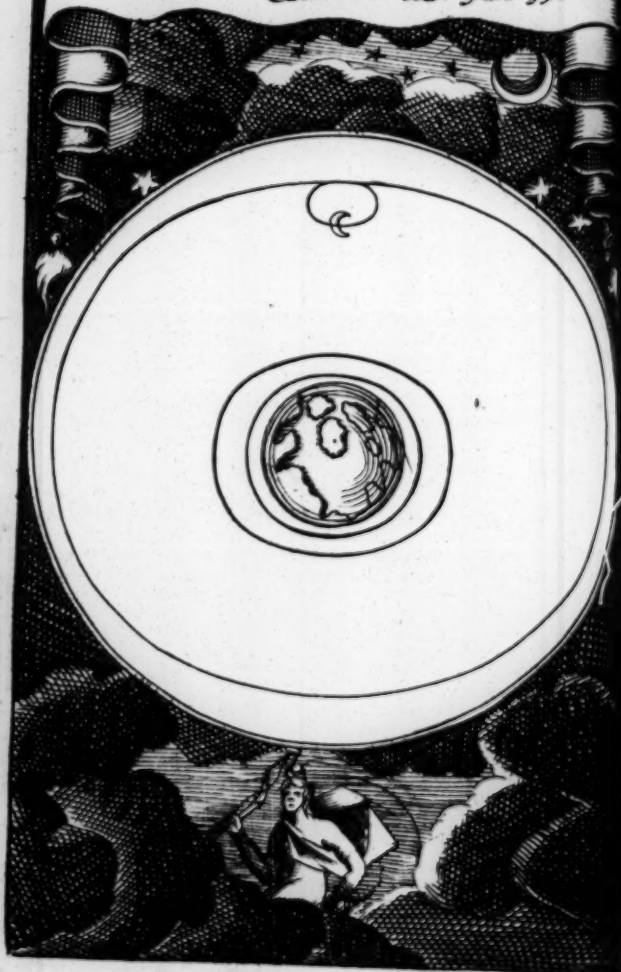


*Illuminatio Lunæ
Per Solem.*

*P. Gassendi Institutio Astronomia lib.
2: cap: 26.*

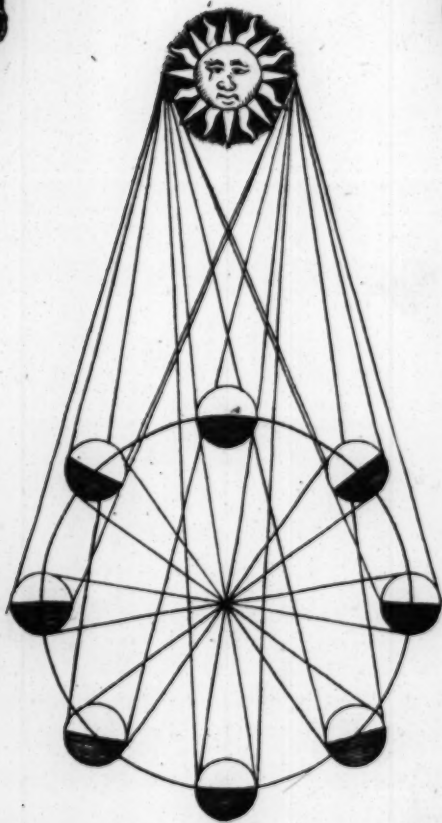


Æstus Maris Per Motum Lunæ
Rdes cartes. lib: 4. art 99.

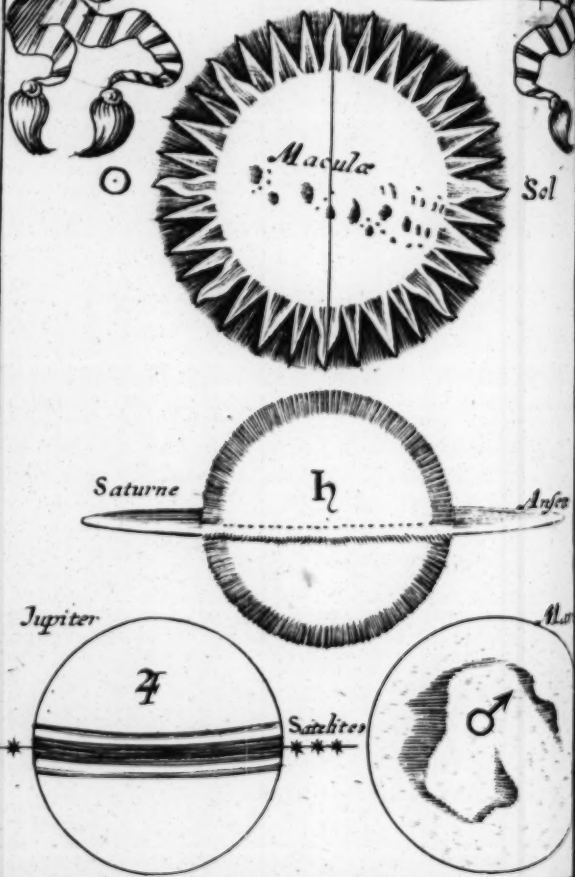


Illuminatio Luna Per Solem.

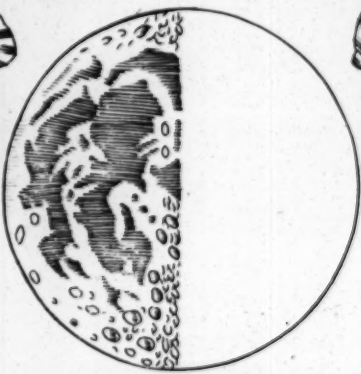
*P. Gassendi Institutio Astronomia lib.
2: cap: 26.*



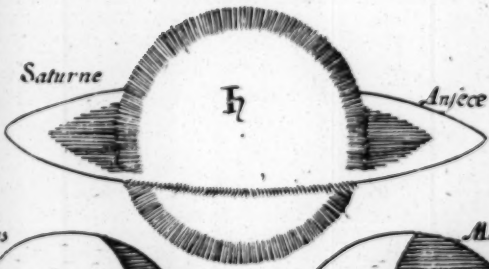
Phases.



Planetarum.



Luna

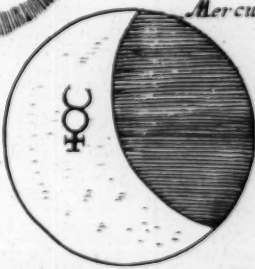


Saturne

Anjèce



♂



♀

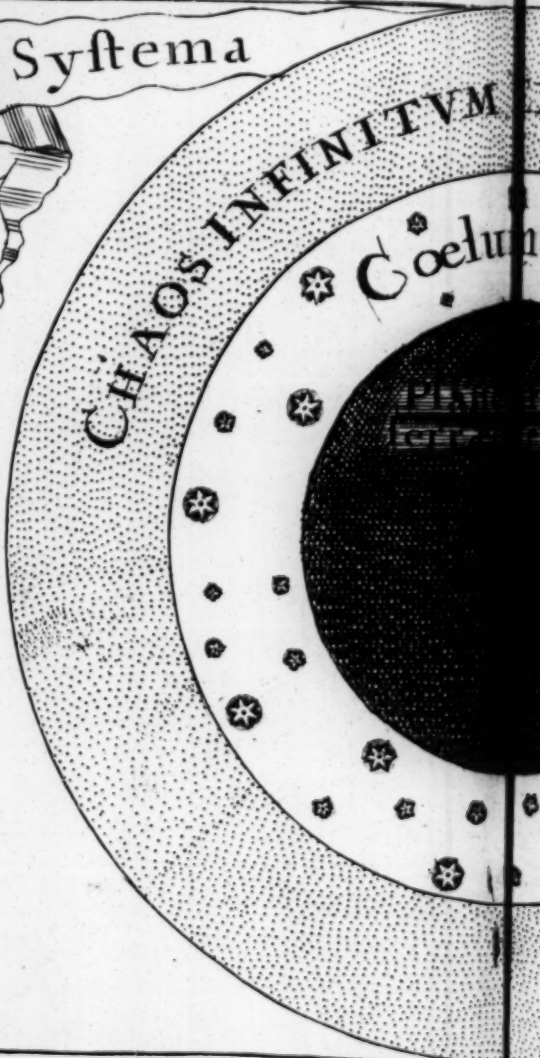
Mercury

Systema



CHAOS INFINITVM

Coelum

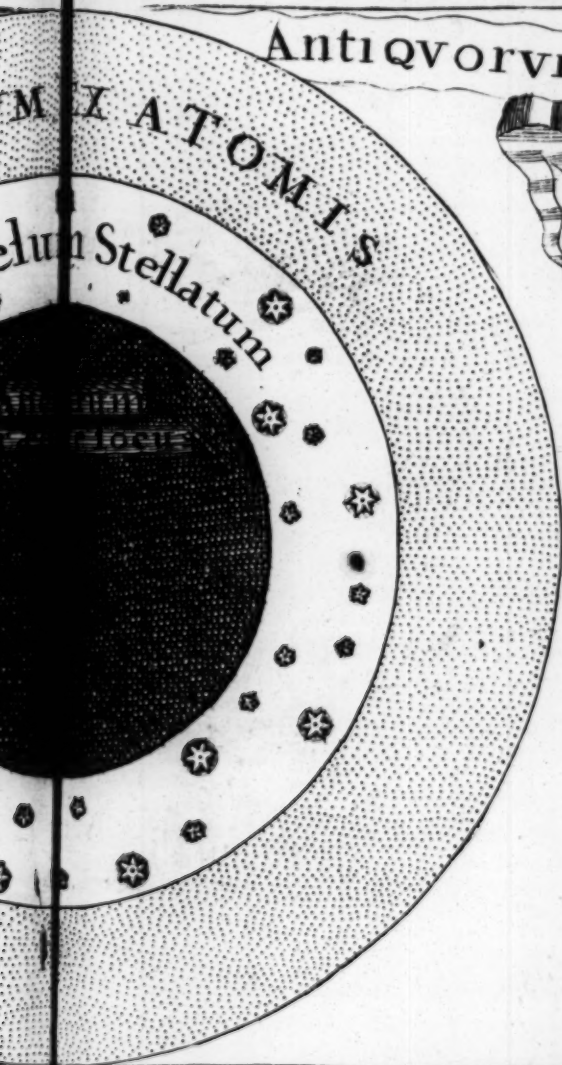


Antiquorum

MAX ATOMIS

elum Stellatum

et
et



*Variae Cometae figure. sicut Varus mundi
et aliis apparuerunt.*

Solaris sive Rosa Disciformis



Chelyiformis



Chelyae ardens



Doliformis erectus Doliformis truncatus Doliformis candelatus



Equinus barbatus



Equinus quadrangularis



Equinus ellipticus



Lampadiformis



Lampadiformis



Lampadiformis



Nixus



Fusca nube circumdatus



Barbatus



The Various formes of Comets, as they have appeared in severall ages of the World.

Corniformis

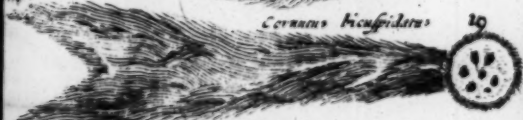
18



Corniformis Lunatus

Cornutus Picuspidatus

19



Curvatus Divericatus

20



Tubiformis

21



Iaculiformis Lunatus

22



Iaculi-formis Ellipticus

23



Iaculi-formis rotundus

24



Varia
Cometarum
figura sicut
Varij Mundi
ætatibus ap-
paruerunt

Rapiformis



25

Ensisformis



26

Ensisformis



27

Ensisformis incurvus



28

Hastiformis



29

Ensisformis



30

Hastiformis



31

25



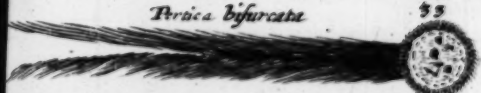
Vera

32



Perica bifurcata

33



26



Cometa quadratus

34



27



Coniformis

35



28



Cometa Pyramidalis

36



0



Cometa Monstrifera

37



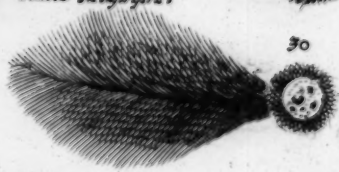
Cometa Monstrifera

38



Cometa Monstrifera

39



Figurae variorum
qui annis his infra.



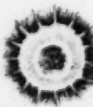
*Cometa 1577 Dic 13 Nov
à Tychohne Observ:*



Cometa 1590



Cometa 1607



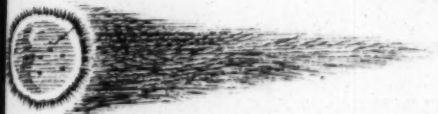
Cometa 1618 Dic. 1 Dec



Cometa 1647

drum
fra.

cometarum,
nominatis apparuerunt.



Cometa 1652



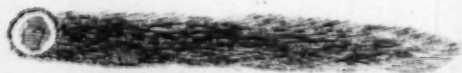
Cometa 1672



Cometa 1661



Cometa 1664. 1665.



Cometa 1677

PHASIS ARTIFI



LUNA
CIALIS

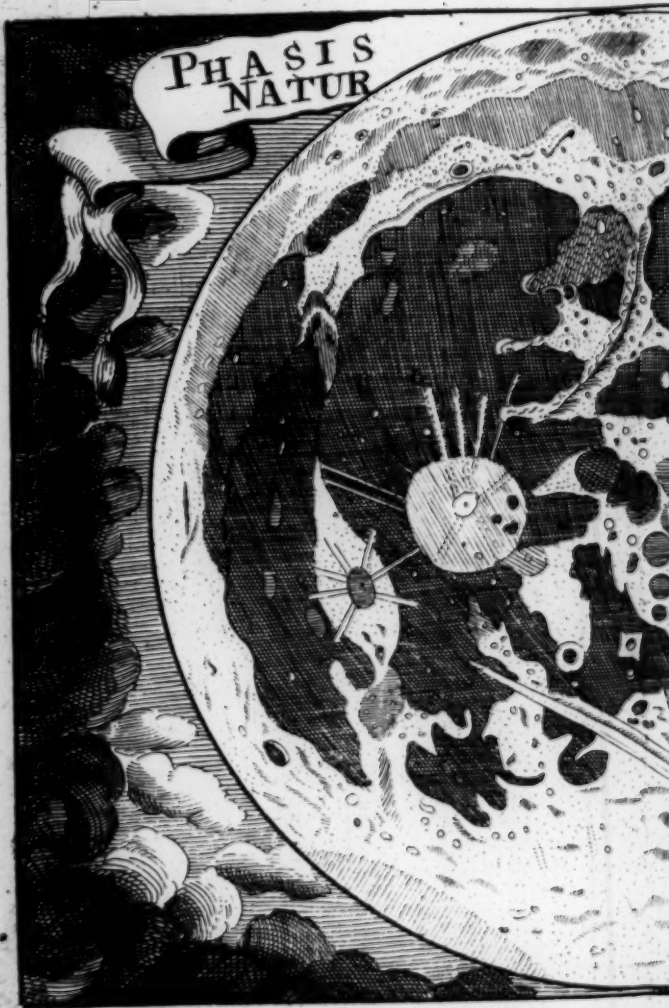




Materialis



PHASIS
NATUR



LUNÆ
ALIS.

